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UNITED STATES DEPARTMENT OF LABOR  
CHILDREN'S BUREAU - - - - PUBLICATION No. 194

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# THE PROMOTION OF THE WELFARE AND HYGIENE OF MATERNITY AND INFANCY

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THE ADMINISTRATION OF THE ACT OF CONGRESS OF  
NOVEMBER 23, 1921, FOR FISCAL YEAR ENDED JUNE 30, 1928





U. S. DEPARTMENT OF LABOR

JAMES J. DAVIS, Secretary

CHILDREN'S BUREAU

GRACE ABBOTT, Chief

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## LETTER OF TRANSMITTAL

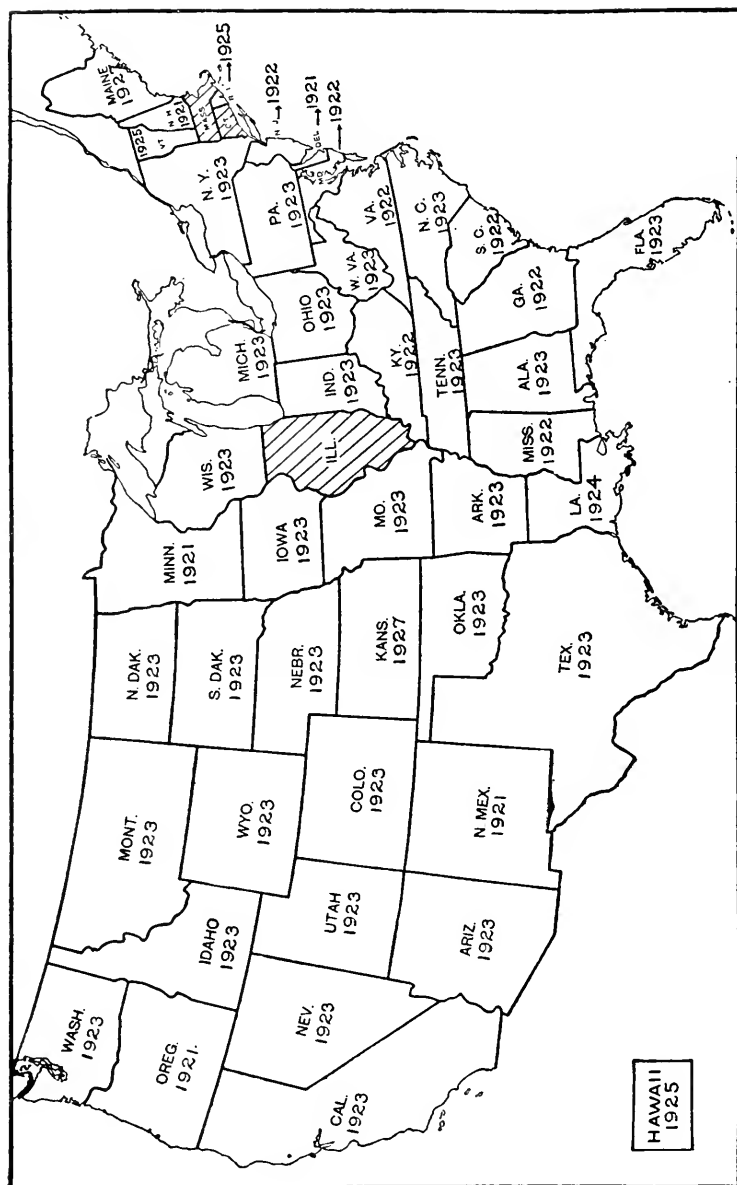
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U. S. DEPARTMENT OF LABOR,  
CHILDREN'S BUREAU,  
*Washington, July 8, 1928.*

SIR: There is transmitted herewith the report of the administration of the maternity and infancy act for the fiscal year ended June 30, 1928, prepared under the direction of Dr. Blanche M. Haines, director of the maternity and infant-hygiene division of the bureau. Respectfully submitted.

GRACE ABBOTT, *Chief.*

HON. JAMES J. DAVIS,  
*Secretary of Labor.*



STATES ACCEPTING THE BENEFITS OF THE ACT FOR THE PROMOTION OF THE WELFARE AND HYGIENE OF MATERNITY AND INFANCY, WITH DATES OF LEGISLATIVE ACCEPTANCE

[Diagonal lines indicate States not cooperating]



# THE PROMOTION OF THE WELFARE AND HYGIENE OF MATERNITY AND INFANCY

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## INTRODUCTION

At the close of the fiscal year 1928 all the States in the Union except three,<sup>1</sup> also the Territory of Hawaii, were cooperating under the provisions of the act for the promotion of the welfare and hygiene of maternity and infancy known as the Sheppard-Towner Act, which was passed by the Sixty-seventh Congress and approved by the President on November 23, 1921, and was extended to include Hawaii on March 10, 1924.

The appropriation authorized by the act was \$1,240,000 for a 5-year period ending with the close of the fiscal year 1927. This period was extended by a bill which passed Congress in January, 1927, authorizing the appropriation for the fiscal years 1928 and 1929 and at the same time providing for the repeal of the act on June 30, 1929.<sup>2</sup>

## FUNDS AVAILABLE AND ACCEPTED BY THE STATES

The funds authorized by the maternity and infancy act first became available in March, 1922. The administration of the funds from that date to June 30, 1927, has been reported.<sup>3</sup> Table 1 shows the amounts available and the total amounts accepted by the States from the appropriations for the fiscal years 1922 to 1928.

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<sup>1</sup> Connecticut, Illinois, Massachusetts.

<sup>2</sup> For text of the acts of Congress in regard to the promotion of the welfare and hygiene of maternity and infancy see Appendix A, p. 163.

<sup>3</sup> The Promotion of the Welfare and Hygiene of Maternity and Infancy. United States Children's Bureau Publications Nos. 137, 146, 156, 178, and 186. Washington, 1924-1928.

TABLE 1.—Amounts available to States and Hawaii from Federal maternity and infancy funds and amounts accepted <sup>1</sup>

[Statement as of June 30, 1928]

States and Territory cooperating	Maximum amounts available from 1922 appropriation <sup>2</sup>	Amounts accepted by States from 1922 appropriation	Maximum amounts available from 1923, 1924, 1925, 1926, 1927, and 1928 appropriations	Amounts accepted by States and Hawaii <sup>3</sup> from—					
				1923 appropriation	1924 appropriation	1925 appropriation	1926 appropriation	1927 appropriation	1928 appropriation <sup>4</sup>
Total.....	\$477,500.00	\$316,554.02	\$1,201,725.96	\$716,333.40	\$877,122.04	\$932,754.69	\$947,959.59	\$977,866.97	\$919,075.78
Alabama.....	10,297.56	10,297.56	25,836.95	25,836.95	25,836.95	25,836.95	25,836.95	25,836.95	25,836.95
Arizona.....	5,753.88	5,000.00	12,253.71	5,000.00	12,253.71	12,253.71	5,000.00	12,253.71	12,253.71
Arkansas.....	8,953.03	5,000.00	21,817.51	6,853.75	16,817.51	13,500.00	14,000.00	12,000.00	21,817.51
California.....	12,731.12	(b)	33,112.01	24,279.35	13,114.93	15,620.00	26,730.00	23,941.58	29,130.00
Colorado.....	7,119.83	5,000.00	16,337.20	9,976.99	9,999.33	9,999.37	10,000.00	10,000.00	5,000.00
Connecticut.....	8,114.75	8,114.75	19,311.48	9,655.74	11,504.01	11,504.01	11,504.01	11,504.01	11,504.01
Delaware.....	5,503.10	5,503.10	11,504.01	11,504.01	16,531.72	16,531.72	16,531.72	16,531.72	16,531.72
Florida.....	7,184.90	5,000.00	16,531.72	8,621.28	15,250.00	28,490.00	29,530.55	29,530.55	29,530.55
Georgia.....	11,533.10	6,750.00	29,530.55	11,000.00	15,250.00	11,725.96	9,933.93	11,725.96	11,725.96
Hawaii.....			<sup>3</sup> 11,725.96						
Idaho.....	5,974.30	5,000.00	12,912.66	6,250.00	7,912.66	5,691.60	9,308.40	6,000.00	7,500.00
Illinois.....	19,631.03	(b)	53,739.10	24,995.00	26,250.00	25,750.00	25,000.00	25,000.00	25,000.00
Indiana.....	11,611.07	8,198.09	29,763.62	26,213.60	26,213.60	26,213.60	26,213.60	26,213.60	26,213.60
Iowa.....	10,423.56	10,423.56	26,213.60	12,097.33	26,213.60	26,213.60	26,213.60	16,800.00	20,000.00
Kansas.....	8,991.51	8,991.51	21,932.52	26,298.64	26,298.64	26,298.64	26,298.64	26,298.64	26,298.64
Kentucky.....	10,452.00	10,452.00	26,298.64	26,298.64	17,590.60	22,127.79	21,664.27	22,129.80	5,000.00
Louisiana.....	9,057.50		22,129.80					15,000.00	5,000.00
Maine.....	6,732.66		15,179.77					19,277.00	19,277.00
Maryland.....	8,270.49	7,913.57	19,777.05	19,277.05	19,268.05	19,164.58	19,277.00	19,277.00	19,277.00
Massachusetts.....	13,691.06		35,981.70						
Michigan.....	13,276.07	13,253.97	34,741.11	34,741.11	34,741.11	34,741.11	34,741.11	34,741.11	34,741.11
Minnesota.....	10,385.44	10,385.44	26,099.65	26,099.65	26,099.65	26,099.65	26,099.65	26,099.65	26,099.65
Mississippi.....	9,039.70	9,039.70	22,076.58	22,076.58	22,076.58	22,076.58	22,076.58	22,076.58	22,076.58
Missouri.....	12,679.67	12,473.15	32,958.19	28,527.38	21,762.17	24,000.00	25,000.00	32,958.19	30,000.00
Montana.....	6,238.31	6,238.31	13,701.91	13,701.91	13,701.91	13,701.91	13,701.91	13,700.00	13,700.00
Nebraska.....	7,924.66	7,924.66	17,661.69	17,661.69	7,409.50	11,913.00	12,980.00	11,000.00	11,000.00
Nevada.....	5,174.63	5,000.00	18,743.21	5,000.00	10,522.00	10,522.00	10,522.00	10,522.00	10,522.00
New Hampshire.....	5,999.61	5,000.00	12,988.31	5,000.00	12,988.31	12,988.31	12,988.31	12,988.31	12,988.31
New Jersey.....	12,119.83	12,119.83	31,284.55	31,284.55	31,284.55	31,284.55	31,284.55	31,284.55	31,284.55
New Mexico.....	5,812.96		12,430.33	12,430.33	12,430.33	12,430.33	12,430.33	12,430.33	12,430.33
New York.....	28,429.70		80,041.78	80,041.78	80,041.78	80,041.78	80,041.78	80,041.78	80,041.78
North Carolina.....	10,773.47	10,773.47	27,259.66	27,259.66	27,259.66	27,259.66	27,259.66	27,259.66	27,259.66
North Dakota.....	6,459.36	5,000.00	14,362.74	6,000.00	6,000.00	8,300.00	8,300.00	7,200.00	6,500.00
Ohio.....	17,993.41	7,187.95	48,843.46	11,900.00	17,297.89	26,006.96	31,400.73	32,500.00	5,000.00
Oklahoma.....	9,575.88	5,000.00	23,679.48	5,000.00	20,934.06	23,679.17	23,679.48	23,679.48	23,679.48

Oregon.....	6,757.35	6,232.61	15,283.46	8,000.00	15,283.46	11,966.83	15,283.46	15,283.46
Pennsylvania.....	24,672.69	24,667.12	68,810.99	68,810.20	68,810.99	68,810.99	68,810.99	68,810.99
Rhode Island.....	8,363.54	-----	14,076.28	-----	14,076.28	14,076.28	14,076.28	14,076.28
South Carolina.....	8,798.54	8,797.50	21,355.65	21,355.65	21,355.65	21,355.65	21,355.65	21,355.65
South Dakota.....	6,436.07	6,436.07	14,293.11	12,844.24	13,451.18	11,285.10	5,000.00	5,000.00
Tennessee.....	10,274.35	5,000.00	25,767.55	18,521.94	22,410.73	25,767.55	25,767.55	24,035.00
Texas.....	15,520.41	9,363.93	41,450.52	32,567.38	40,689.20	35,350.52	35,350.52	41,450.52
Utah.....	6,013.85	5,000.00	13,030.89	6,365.00	13,000.00	12,279.23	13,000.00	13,000.00
Vermont.....	5,795.09	( <sup>6</sup> )	12,376.90	-----	2,775.33	4,937.38	5,000.00	5,000.00
Virginia.....	10,209.61	10,209.61	25,574.00	25,574.00	25,574.00	25,574.00	25,574.00	25,574.00
Washington.....	8,060.58	4,998.70	19,149.55	10,000.00	10,000.00	10,000.00	3,000.00	5,000.00
West Virginia.....	8,302.46	5,000.00	19,871.74	5,000.00	10,000.00	19,871.74	19,871.74	19,871.74
Wisconsin.....	10,938.04	8,995.03	27,751.62	27,750.44	27,751.62	27,751.62	27,751.62	27,751.62
Wyoming.....	5,438.57	4,995.87	11,311.12	5,000.00	11,000.00	6,600.00	7,500.00	5,000.00

<sup>1</sup> Under the terms of the act each State accepting receives \$5,000 outright; an additional \$5,000 is available to each State if matched; the balance of the appropriation is distributed among the States, if matched, on the basis of population. Amounts shown as accepted are the amounts actually accepted by the States less refunds of unexpended balances returned to the Federal Treasury as of June 30, 1928.

<sup>2</sup> Owing to the fact that only a few months of the 1922 fiscal year remained at the time the appropriation act for that year was passed a full appropriation was not made. to the States in each year from 1923 to 1928 has been \$1,190,000.

<sup>3</sup> The benefits of the act were extended to Hawaii on March 10, 1924. No appropriation therefore was available to that Territory in 1923 and 1924. The total amount available to the States in each year from 1923 to 1928 has been \$1,190,000.

<sup>4</sup> Actual amounts accepted to June 30, 1928, are given here. These funds are available until July 1, 1929, as under the terms of the maternity and infancy act (42 Stat. 224, sec. 2) "so much of the amount apportioned to any State for any fiscal year as remains unpaid to such State at the close thereof shall be available for expenditures in that State until the close of the succeeding fiscal year." Payments from the 1928 appropriations will be made to many of the States during 1929. As both the original act and the appropriations under it terminate June 30, 1929 (44 Stat. 1024), the Comptroller General of the United States has ruled that no funds appropriated under the act can be expended after June 30, 1929 (decision of Apr. 9, 1928, M.S. Comp. Gen. A-22370).

<sup>5</sup> California and Illinois accepted the full amount available, and Vermont accepted \$5,000. However, these funds were not spent but were returned to the Federal Treasury.



## SUMMARY OF STATE ACTIVITIES DURING 1928

General educational work has been continued in the cooperating States during the year ended June 30, 1928. Instruction has been given to individual parents at health conferences and in their homes; information has been disseminated to members of the medical and nursing professions, teachers, mothers, young girls, and midwives; and literature relating to maternal and infant care has been widely distributed.

Besides increasing the scope of these activities a number of States have also put emphasis on other types of work directed against various factors adverse to the health of mothers and babies. Among such special activities were efforts to increase the use of silver nitrate for prevention of ophthalmia neonatorum and the use of toxin-antitoxin for prevention of diphtheria in young children. Assistance has been given toward the investigation and regulation of milk supplies in regions having high infant mortality rates due to diarrhea and enteritis. The attempt to reduce maternal mortality, particularly the deaths from puerperal sepsis, has continued, especially through the instruction, supervision, and regulation of midwives and the elimination of those found unfit to practice.

### PERSONNEL OF THE ADMINISTRATIVE STAFFS

The needs of the State and the size of its budget determine not only the amount and to a great degree the kinds of work to be done but also the number and type of personnel employed in conducting the work. Physicians, nurses, dentists or dental hygienists, nutritionists, social workers, teachers, and clerical workers were on the staffs of the State bureaus and divisions of child hygiene.

In all except 4 of the 45 States accepting the provisions of the Sheppard-Towner Act the administration is lodged in the State department of health, and the head of the health department is in every case a physician.

With reference to the four exceptions: Nebraska and New Mexico have no State department of health, and the administration of the act in these two States is in the bureau of health of the State department of public welfare, the head of the bureau of health being in each State a physician. In Colorado the administration of the act was given by the State legislature to an already existing bureau of child welfare in the State department of education; two physicians are employed by this bureau for the maternal and infant-hygiene work. In Iowa the legislature gave the administration to the extension department of the State University of Iowa; the faculty of the medical school of the university constitute the medical advisory committee, and physicians on the staff of the maternity and infancy division of the extension service supervise the work.

During the year under review physicians were in immediate charge of the work—usually as directors of the maternity and infancy or child-health divisions of the State department of health—in 30 of the 45 cooperating States: Arkansas, California, Delaware, Georgia, Idaho, Indiana, Kansas, Kentucky, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Virginia, Wisconsin, and Wyoming. Nurses directed the work in the Territory of Hawaii and in 10 States—Alabama, Florida, Maine, Nebraska, New Hampshire, New Mexico, South Carolina, South Dakota, Washington, and West Virginia; while in 5 States—Arizona, Colorado, Iowa, Louisiana, and Nevada—the administrative heads of the divisions were neither physicians nor nurses. In all these States except the 4 previously mentioned, however, the division was part of a department of health, headed by a physician.

Including State directors paid from maternity and infancy funds, 36 physicians gave full time for the whole year and 25 gave full time for part of the year. Thirteen gave part-time service for the entire year and seven gave part-time service for part of the year. In addition many physicians were employed for occasional service or by the day in 13 States: Colorado, Delaware, Indiana, Louisiana, Maryland, Missouri, Montana, New Hampshire, New York, Ohio, Utah, Virginia, and Washington. In Maryland 60 physicians were employed by the day; in New York 292 were employed for occasional service at conferences; in Montana 16 were employed for occasional service at conferences; and Washington employed 12 pediatricians by the day to conduct child-health conferences. Thirty-seven States and Hawaii had physicians on their staffs. In 33 States and Hawaii the physicians were paid from maternity and infancy funds. In 5 others—Arkansas, New Jersey, New York, Vermont, and Wyoming—salaries were paid from other State funds for the services of the medical directors, the State health officers in 3 of these States—Arkansas, Vermont, and Wyoming—acting as directors. In the 45 cooperating States and the Territory of Hawaii approximately 500 physicians were employed for varying periods during the year.

The services rendered by physicians include general administration, conducting of child-health and prenatal conferences and classes for mothers, and other educational work for promotion of the health of mothers and children and prevention of diseases to which they are particularly subject.

Public-health nurses were employed in the Territory of Hawaii and the 45 cooperating States, either as members of the State headquarters staff or on detail to counties. Not including the 390 nurses detailed to counties, approximately 425 nurses served during the year on State headquarters staffs for varying periods of maternity and infancy work. In 43 States and the Territory of Hawaii nurses served on the State headquarters staff. In 36 States and Hawaii 146 nurses were employed for full-time service the entire year. Ninety-six nurses were employed for full time a part of the year, 6 for part time the entire year, and 21 for part time during part of the year. In Colorado additional nurses were employed by the day, and in Pennsylvania 140 to 150 State nurses were paid from maternity and infancy funds for time spent in maternity and infancy work. Nurses

have served as administrators of bureaus or divisions of child hygiene, as supervisors and advisers of county and field nurses, and as instructors of midwives. They visited preschool children and expectant mothers in their homes, and through these visits they assisted in the development of prenatal and child-health centers. They inspected maternity and infant homes, conducted demonstrations in infant and prenatal care and campaigns to promote breast feeding, assisted with birth-registration campaigns, made surveys, and organized many types of work.

A few States employed dentists and dental hygienists to promote oral hygiene among the expectant mothers and preschool children. Three dentists and a dental hygienist gave full time for the entire year (in Iowa, Louisiana, New York, and Utah). Five dentists and five dental hygienists gave full-time service part of the year, and one dental hygienist gave part-time service the entire year. Eight dentists were employed by the day in Maryland.

The supervision and instruction of midwives has been an important feature of the work, particularly in the South, and many staff and county nurses include it in their regular programs. Four midwife supervisors and teachers were employed for full-time service during the entire year in three States. Three of these supervisors were physicians, and the fourth was a nurse (not included among the physicians and nurses mentioned in the foregoing paragraphs). A fifth was employed for full-time service part of the year in another State, a sixth for part-time service the entire year in still another State. Nine nurses served as supervisors and instructors of midwives and also as inspectors of maternity and infant homes in New Jersey.

Inspectors of maternity and infant homes were employed in five States. In California, Ohio, and Texas four inspectors were employed full time during the year. Nebraska employed a part-time inspector for the entire year. New Jersey employed nine nurses as both inspectors of maternity and infant homes and supervisors of midwives, as has been stated.

The child-hygiene bureaus and divisions generally have used their funds to employ physicians and nurses or other trained field workers and have maintained small clerical staffs. A total of 165 clerks and stenographers were paid from maternity and infancy funds during the year under review. In 36 States and the Territory of Hawaii 118 were employed full time, 28 were employed full time for part of the year, and 19 were employed part time for the whole year. Eight States—Arizona, Idaho, Louisiana, Missouri, New Jersey, Oregon, South Dakota, and Tennessee—had only part-year or part-time clerical and stenographic assistants paid from maternity and infancy funds. One State—Nevada—had no stenographers nor clerks on its maternity and infancy staff. Fifty additional workers were reported, including nutritionists, lecturers, statisticians, and chauffeurs for child-welfare trucks.

Twenty States reported approximately 7,000 volunteer assistants as giving their services to the maternity and infancy work. These volunteers included physicians, dentists, nurses, and lay persons. Pennsylvania reported such services of approximately 1,000 physicians, and Utah the services of approximately 1,000 volunteers, including physicians, dentists, nurses, and lay persons.

The total number of workers paid in whole or in part from maternity and infancy funds in the cooperating States and Hawaii during the year under review was approximately 1,600, of whom 353 were employed full time for the entire year. This number is in striking contrast to the large number of volunteer workers who gave freely of their time to promote the work for mothers and children.

### CONFERENCES

Child-health conferences have provided the main channel through which trained professional workers have been able to give to parents information in regard to the care, hygiene, and health of their children. Through conferences the problems in the care of expectant mothers have been given special attention also.

As in previous years, five types of conference have been held: Child-health conferences, prenatal conferences, and combined prenatal and child-health conferences (all conducted by physicians), conferences conducted by nurses, and dental conferences conducted by dentists. Conferences were held in permanent centers and in the headquarters of the local health departments. Itinerant conferences were conducted by traveling units of physicians and nurses transported by means of trucks containing an examining room and equipped with supplies, or automobiles were used to transport physicians, nurses, and supplies to a temporary center or quarters arranged for the conference.

During the year under review 7,341 combined prenatal and child-health conferences were conducted by physicians in eight States: Delaware, Nevada, New York, North Carolina, South Dakota, Tennessee, Utah, and Wisconsin. At the conferences 4,283 expectant mothers were registered, 3,789 were examined, and 23,273 visits were made by them to the conferences. The number of infants and preschool children registered was 34,271, the number examined was 34,244, and 47,421 visits were made by children to conferences of this type.

Child-health conferences were conducted by physicians in the Territory of Hawaii and 41 States: Alabama, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, and Wyoming. Altogether 19,840 such conferences were held, 182,618 infants and preschool children were registered, and 185,622 were examined. One State that reported 8,033 children examined did not report the number registered. The children made 298,468 visits to the conferences.

Prenatal conferences were conducted by physicians in 18 States: Alabama, Arkansas, California, Colorado, Delaware, Florida, Georgia, Kentucky, Maryland, Michigan, Mississippi, New Jersey, New York, Oregon, Pennsylvania, South Carolina, Tennessee, and Texas. The number of conferences held was 2,002; 8,153 expectant mothers were reported registered and 10,440 were examined. One



State reported 2,998 mothers examined but did not report the number registered. The number of visits to the conferences was 14,258.

Nurses conducted 11,580 health conferences (with no physician present) in the Territory of Hawaii and 27 States: Alabama, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Idaho, Kansas, Kentucky, Louisiana, Maine, Maryland, Missouri, Montana, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, South Carolina, Tennessee, Texas, Virginia, and Wyoming. At the conferences 72,565 infants and preschool children were inspected, and 7,122 expectant mothers were reported instructed in prenatal care. Children made 129,117 visits, and expectant mothers made 10,266 visits to the conferences.

Dentists conducted 851 dental conferences in 15 States: Arizona, Arkansas, California, Florida, Georgia, Iowa, Louisiana, Maryland, Mississippi, New Hampshire, New Mexico, Oklahoma, Oregon, Texas, and Utah. At 768 of these conferences 180 expectant mothers were given dental examination and advice, and 21,413 preschool children were examined, advice being given on dental care and oral hygiene. One State did not report the number of mothers and children attending the conferences.

In the 45 cooperating States and the Territory of Hawaii a total of 219,866 infants and preschool children were examined by physicians at child-health conferences and combined prenatal and child-health conferences. Including with this number the children inspected by nurses and those receiving examinations by dentists, 313,844 infants and preschool children were reported as under supervision at conferences during the year.<sup>1</sup> Pennsylvania led in the number of children examined at conferences—19,219; New York was next with 13,841. Alabama, Indiana, New Jersey, North Carolina, and Utah each reported more than 10,000 children examined at conferences.

The total number of expectant mothers examined by physicians at prenatal conferences and combined prenatal and child-health conferences in the 22 States reporting was 14,229. Including with this number those advised at conferences held by nurses and by dentists 21,531 expectant mothers received advice on some phase of prenatal care at these conferences.<sup>1</sup> In the number of expectant mothers examined at conferences New York State led with 4,324; Georgia was next with 2,998.

A feature of the year's work was the extension of prenatal care through prenatal conferences to the patients of colored midwives. It was possible through these conferences to place under antisyphilitic treatment many expectant mothers whose Wassermann reactions were positive.

Table 2 summarizes the conference work in the cooperating States and the Territory of Hawaii.

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<sup>1</sup> This figure may involve some duplication, as some of the same persons may have attended conferences of different types.



Nevada.....	4	2	36	2	203	203	103	493	53	493	53	1	12	2	1	3
New Hampshire.....					10	203	401	439	10,536	(2)	52	2	60	3	12	3
New Jersey.....					104	3,384	29,472	41	2,634	541	311	2	60	3	9	2
New Mexico.....					1,760	10,894	62	129	439	541	311	2	60	3	1	2
New York.....					772	15,197	(2)	359	2,494	614	3,316	2	60	3	9	2
North Carolina.....					5,173	1,248	11,773	1,248	13,537	5,430	10,283	1,149	60	3	1	2
North Dakota.....					167	5,006	5,006			204	2,826	224	60	3	4	
Ohio.....					85	3,828	3,828			204	2,826	224	60	3	4	
Oklahoma.....					111	2,267	2,267			204	2,826	224	60	3	4	
Oregon.....					326	3,552	4,348	137	419	1,516	3,316	640	322	3	6	
Pennsylvania.....					6,246	19,219	87,552	310	329	1,513	3,316	640	322	3	36	
Rhode Island.....					210	663	3,664			6	17	54	322	3	3	
South Carolina.....					128	2,774	2,888	36	99	237	17	54	322	3	3	
South Dakota.....					18	1,476	18	1,476								
Tennessee.....	49	18	1,476	18	1,476	3,803	3,803	12	57	57	879	879	73	2	1	
Texas.....	9	16	29	18	68	383	5,057	6,428	22	113	536	1,057	29	2	20	
Utah.....					184	13,633					7,738	1,057	29	2	20	
Vermont.....	526	180	10,927	184	13,633						7,738	1,057	29	2	20	
Virginia.....					22	638	649				4,305	1,609	123	33		
Washington.....					146	2,979	2,979				4,305	1,609	123	33		
West Virginia.....					74	3,152	3,152				4,305	1,609	123	33		
Wisconsin.....					454	3,557	5,516				4,305	1,609	123	33		
Wyoming.....	434	272	6,824	303	11,437						4,305	1,609	123	33		
					54	1,252	1,252				(2)	67		20		

<sup>1</sup> New permanent health centers, whose support has been assumed wholly or in part by the respective counties or communities in the majority of the States.

<sup>2</sup> Not reported.

<sup>3</sup> During the second 6 months, January to June, 1928.

<sup>4</sup> May include some conferences at which physicians were present.

<sup>5</sup> Includes some individual conferences.

<sup>6</sup> Includes 6 conducted in connection with child-health conferences.

### PERMANENT PRENATAL AND CHILD-HEALTH CENTERS

Frequently after demonstration by an itinerant child-health or prenatal conference a permanent locally supported center, open on regular days for health conferences, is established. To be successful a center requires not only the services of physicians and public-health nurses but also the interested support of the community. With the development of full-time county health departments the necessary personnel to conduct centers becomes available in these departments. Thus it has been possible to establish new centers in communities less urban than those able to maintain centers in the earlier years of maternity and infancy work. Three types of center have been developed: Combined prenatal and child-health centers, to which both mothers and children come for examination and advice; child-health centers, for conferences for children only; and prenatal centers, for conferences with expectant mothers.

The total number of new permanent health centers of these three types established during the year under review was 322. (Table 2.) Opportunity for examination of infants and preschool children was given in 305 and for examination and advice for expectant mothers in 120. The increase from 84 new centers providing opportunities for prenatal conferences in 1927 to 120 centers of this character in 1928 is the notable feature in the development of permanent centers. In 13 States—Alabama, Arkansas, Georgia, Maryland, Michigan, Montana, New Hampshire, New York, North Carolina, Ohio, Tennessee, Utah, and Wisconsin—103 new combined prenatal and child-health centers were established. In the Territory of Hawaii and 18 States—California, Florida, Georgia, Kentucky, Louisiana, Missouri, Montana, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Virginia, Washington, and West Virginia—202 new permanent child-health centers were established. In 8 States—Colorado, Georgia, Kentucky, Maryland, Michigan, Mississippi, New Jersey, and New York—17 new prenatal centers were established. In the number of new combined prenatal and child-health centers established during the year Utah led with 33 and Wisconsin was second with 20. Pennsylvania reported the establishment of 36 new child-health centers, the largest number any State reported. Louisiana and West Virginia were next, each with 21, and Texas reported 20. Georgia and Mississippi each reported 4 new prenatal centers.

Complete reports of attendance and work at these centers are not always available because a center that has become thoroughly established ceases to be an activity of the State department of health, though the State bureau or division of child hygiene generally continues to give advisory service and helps in the solution of any problems that may arise.

### DEFECTS FOUND AT CONFERENCES

As the chief purpose of the child-health conferences is to promote the hygiene and welfare of infants and preschool children every effort is made to arouse the parents' interest in the correction of defects and of deviations from the normal that may be found in their children. The children invited to the conferences are the so-called well babies or apparently normal children. It is not the purpose of the

conference to give attention to sick children. If any child attending is found to be obviously ill the parents are urged to consult their family physician immediately. However, many so-called well children have defects that need correction. Thirty-eight States reported finding that 110,507 infants and preschool children had one or more defects, and a total of 287,019 defects were recorded in 38 States. Owing to the limited numbers of field workers on the staffs of the State bureaus and divisions of child hygiene it was not possible to follow up all children examined at conferences who were found to have defects, though 20 States reported the number or percentage of defects known to have been corrected. Arkansas reported the largest number of children having defects corrected; 3,352 corrections were made for 3,508 children having defects. Oregon reported that parents had corrections made for approximately 75 per cent of the children found to have defects. Iowa estimated (on the basis of reports of nurses who did follow-up work) that corrections were made for approximately 74 per cent of the children found to have defects. The State of Washington estimated that corrections were made for two-thirds of such children.

### COUNTY HEALTH DEPARTMENTS AND COUNTY NURSES

During the year under review 29 States reported nurses detailed to counties, communities, or cities. Six States reported 16 county nurses paid for full-time maternity and infancy service the entire year. Nine States reported 22 county nurses paid for full-time service part of the year. Seventeen States reported 159 county nurses paid for part-time service for the entire year, and 24 States reported 193 nurses paid for part-time maternity and infancy service part of the year. A total of 390 county nurses were paid for full-time or part-time maternity and infancy service, 11 other nurses were detailed to cities, and 28 were detailed to other local communities. The States detailing nurses to counties, communities, or cities during the year were Alabama, Arkansas, California, Georgia, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, Montana, Nevada, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania,<sup>2</sup> South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

The establishment of full-time county health departments or county health units has caused a demand for the services of county nurses. The bureaus and divisions of child hygiene in many States have included in their plans assistance to county health units through payment in whole or in part from maternity and infancy funds of the salaries of nurses detailed to counties. The amount of the salary assumed by the State maternity and infancy agency has been in proportion to the amount of time spent by the nurses in maternity and infancy work. In a few States reimbursement has been on the basis of services rendered by both the county physicians and the nurses.

In several States much of the State health work is decentralized, being conducted through the county health departments. Thus pre-natal letters and literature are distributed from the departments,

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<sup>2</sup> Not including the 140 to 150 nurses in the public health nursing division of the State department of health in Pennsylvania, who were paid in part from maternity and infancy funds.

and midwives are instructed, supervised, and licensed by them. These county units have made possible the establishment of permanent centers for prenatal and child care in the smaller communities and have increased the opportunities for contact with mothers and children, particularly through nurses' visits in the homes.

In addition to nurses detailed to county health departments State nurses have been detailed to counties not having county health departments, to towns or communities, and to a few cities to develop a maternity and infancy program.

As opportunities for field experience in county work in connection with training centers for county health departments have increased and nurses have been admitted to the training centers, some of the county nurses now entering the work have had the advantages of this training—which now includes maternity and infancy work.

### HOME VISITS

Visits of public-health nurses to homes have been a feature of maternity and infancy programs in 40 States and the Territory of Hawaii. The nurses have instructed expectant mothers on the care they should obtain for themselves and their unborn babies and have made information available to parents on the care and hygiene of their children. Either State staff nurses or nurses detailed to counties, communities, or cities have made 700,981 visits to homes. Virginia reported 118,576, the largest number reported by any one State. In New Jersey 97,961 visits were made to homes, in New York 64,612, and in Rhode Island 53,605, most of which were made at regular intervals to children under supervision. Only four States—Indiana, North Dakota, South Dakota, and Vermont—did not include home visiting in their work; one—Washington—did not report whether this type of work was done. (Table 3.)

TABLE 3.—*Number of visits made by nurses, number of community and group demonstrations, and number of counties in which maternity and infancy work has been done, in the States and the Territory of Hawaii cooperating under the maternity and infancy act, during the year ended June 30, 1928*

States and Territory cooperating	Home visits by nurses	Community demonstrations	Group demonstrations	Number of counties—		
				In State	In which maternity and infancy work has been done—	
					During 1928	Since the beginning of co-operation
Total .....	700,981	171	11,906	2,953	2,074	2,671
Alabama .....	50,081	—	—	67	32	33
Arizona .....	9,041	31	178	14	7	14
Arkansas .....	6,081	—	457	75	62	75
California .....	20,844	—	601	58	56	58
Colorado .....	961	4	6	63	29	58
Delaware .....	31,691	—	—	3	3	3
Florida .....	5,333	—	87	67	67	67
Georgia .....	24,968	19	633	161	77	160
Hawaii .....	14,017	—	—	5	4	4
Idaho .....	811	—	—	44	21	44
Indiana .....	—	—	305	92	53	91

TABLE 3.—*Number of visits made by nurses, etc.*—Continued

States and Territory cooperating	Home visits by nurses	Community demonstrations	Group demonstrations	Number of counties—		
				In State	In which maternity and infancy work has been done—	
					During 1928	Since the beginning of co-operation
Iowa.....	325			99	52	99
Kansas.....	521		20	105	105	105
Kentucky.....	350	4	200	120	120	120
Louisiana.....	3,398	5	251	64	37	62
Maine.....	8,674		622	16	15	15
Maryland.....	6,462		45	23	23	23
Michigan.....	5,005	3	453	83	79	83
Minnesota.....	758		5	87	72	87
Mississippi.....	6,089			82	82	82
Missouri.....	5,442	44	958	114	53	112
Montana.....	3,913		95	56	39	56
Nebraska.....	1,932		264	93	82	90
Nevada.....	3,893		86	17	17	17
New Hampshire.....	11,871		312	10	10	10
New Jersey.....	97,961	3	10	21	21	21
New Mexico.....	4,291	7	262	31	14	31
New York.....	64,612	37	3,221	62	62	62
North Carolina.....	33,473			100	40	49
North Dakota.....				53	22	42
Ohio.....	12,262		3	88	68	77
Oklahoma.....	1,495	4	140	77	77	77
Oregon.....	5,128		298	36	32	36
Pennsylvania.....	43,903			67	67	67
Rhode Island.....	53,605		2	5	5	5
South Carolina.....	6,030	8	75	46	46	46
South Dakota.....			33	69	55	65
Tennessee.....	4,405		33	95	64	95
Texas.....	13,582		1,492	254	60	115
Utah.....	1,900		122	29	25	28
Vermont.....				14	13	13
Virginia.....	118,576	1		100	54	97
Washington.....	(1)		(1)	39	25	33
West Virginia.....	12,814		320	55	39	50
Wisconsin.....	1,110	1	295	71	66	71
Wyoming.....	3,373		22	23	22	23

<sup>1</sup> Not reported.

### LOCAL DEMONSTRATIONS OF MATERNITY AND INFANCY PROGRAMS

Fifteen States—Arizona, Colorado, Georgia, Kentucky, Louisiana, Michigan, Missouri, New Jersey, New Mexico, New York, Oklahoma, South Carolina, Virginia, and Wisconsin—conducted 171 community demonstrations during the year under review. Most of these were maternity and infancy nursing programs conducted in a county or community during varying periods. When the support of a demonstration was assumed by the county, as frequently occurred, the program thus became a permanent piece of work. In 1928 Missouri conducted 44 community demonstrations, the largest number reported by any one State during the year. The Missouri type of demonstration usually consisted of an educational program in child health, including lectures, films, special exhibits, and child-health conferences during a week or longer. New York reported 37 community demonstrations, most of them demonstrations of maternity and infancy nursing for which responsibility has been assumed by the communities. (Table 3.)

Thirty-four States—Arizona, Arkansas, California, Colorado, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, West Virginia, Wisconsin, and Wyoming—conducted 11,906 group demonstrations on specific phases of prenatal or child care. New York reported the largest number, 3,221, and Texas was next with 1,492. (Table 3.) This type of demonstration included general care of the baby, bathing, clothing (layettes), and the preparation of foods and formulas; demonstrations before midwives (such as preparation for delivery of the mother and her care), sterilizing dressings and pads, the care of the baby, including care of the cord and care of the eyes, the making of simple appliances, such as an improvised bed for the baby, delivery pads from newspapers, and bedpans from newspapers, and many other special subjects, such as care of the breasts and manual expression of breast milk.

Exhibits of foods and lectures on preparation of foods and their value are frequently a feature of a local demonstration. All the State bureaus and divisions of child hygiene give information on proper food for the expectant mother, the infant, and the preschool child. Three States—Kentucky, Maine, and New York—employ nutritionists. In the other cooperating States nutrition is stressed at conferences, in talks, and lectures, and in the nurses' visits to homes.

### PROMOTION OF BREAST FEEDING

Emphasis on the importance of mother's milk for infants has continued. In many States the efforts to inform mothers of the importance of maintaining their supply of milk have reached the proportions of a campaign for breast feeding. In two States—Michigan and New York—breast-feeding surveys and campaigns were conducted in certain counties. Other States depended upon talks, lectures, conferences, nurses' visits, literature, and demonstrations to inform expectant and nursing mothers of the greater chance for life and health of the breast-fed baby compared with that of the baby who is bottle fed.

The State reports indicate that the proportion of infants who are breast fed varies in different sections of the United States. Colorado reported that among 1,401 babies examined at conferences 1,203 were breast fed. Delaware estimated that approximately 50 per cent of the babies in the State are breast fed. Kansas reported 2,363 breast fed among 3,750 examined at conferences. Kentucky reported that practically all rural mothers nurse their babies and estimated that 75 per cent of the babies in the State are breast fed. Michigan reported that a survey completed in seven counties showed 7 per cent never to have been breast fed and many of the remaining 93 per cent to have been weaned early. Minnesota reported about 85 per cent breast fed, basing this estimate on a survey of two counties. Missouri reported that 53 per cent of 3,594 babies examined at conferences were breast fed at least six months. New Hampshire estimated 57 per cent breast fed at birth, 43.5 per cent at 1 month of age, 24.8 per cent



at 3 months of age, and 15.1 per cent at 6 months. New York reported that of babies attending child-health centers in New York City 23,242 were breast fed, 5,694 were breast and bottle fed, and 8,006 were bottle fed. South Carolina estimated at least 90 per cent of the babies to be breast fed and reported a tendency to continue breast feeding too long—12 months in many instances. South Dakota estimated that 66 per cent of the babies in the State are breast fed, and Virginia estimated that 52 per cent are breast fed. The State of Washington reported information on 1,507 children showing 44 per cent entirely breast fed, 33 per cent partly breast fed, and 24 per cent artificially fed. West Virginia reported that record cards of preschool children showed a high percentage to have been breast fed, and Wisconsin estimated that 90 per cent of the children who attended the health centers were breast fed.

According to these reports the proportion of babies breast fed until weaning time was higher in many of the Southern States than in some Northern States. Factors responsible for these variations in percentages of breast-fed babies in different sections include local and racial customs; types of advice given to mothers and expectant mothers by family physicians, pediatricians, and health departments; and the determination of the mother to provide her child with her own milk. The effect of educational work is indicated by the high proportion of breast feeding (90 per cent) reported by Wisconsin for the babies supervised in the health centers.

### PRENATAL CARE

A variety of activities have contributed to the information of the public, of mothers, and of fathers on the importance of prenatal care. In a measure stillbirth rates and infant and maternal mortality rates reflect the effect of the care or the lack of care the expectant mother receives.

Expectant mothers have been informed of the importance of prenatal care through instruction given by nurses in visits to their homes, through child-health conferences conducted by physicians and nurses, in which the value of prenatal care to the child was discussed, through itinerant prenatal conferences and permanent prenatal centers, through classes and correspondence courses conducted for mothers, and through the distribution of prenatal letters and literature. County-wide demonstrations in prenatal care also were conducted in New York and Michigan. Through these activities 150,000 expectant mothers were reached in 37 of the cooperating States reporting during the year ended June 30, 1928. Seven States and the Territory of Hawaii did not report the number of expectant mothers reached through these activities. One State did not report work done among expectant mothers.

Expectant mothers were urged to place themselves under the care and supervision of their physicians early in the period of pregnancy. The advisability of reporting to the physician at regular intervals and of having frequent urinalyses was explained to them.

## CARE DURING AND AFTER CONFINEMENT

The care that women receive during and after confinement is influenced by the accessibility of the services of physicians, nurses, or hospitals, the type of hospital care available, and the types of care given by the attendants.

The State bureaus and divisions of child hygiene or welfare have continued efforts to improve conditions surrounding the care of women at the time of childbirth. Several States have included in their maternity and infancy activities the licensing and inspection of hospitals accepting maternity cases and the inspection of maternity homes. Graduate courses in obstetrics have been arranged for physicians in several States, and the continuance of instruction, regulation, and supervision of midwives was reported by a number of States.

### INSPECTION OF MATERNITY AND INFANT HOMES

In three States—California, Kansas, and South Dakota—the child-hygiene bureaus or divisions inspect and license maternity homes and hospitals. During the year under review 1,394 official or unofficial inspections were made of 1,308 maternity homes or hospitals by the child-hygiene bureaus of 14 States—California, Colorado, Kansas, Kentucky, Nebraska, New Hampshire, New Jersey, New York, Ohio, South Dakota, Tennessee, Texas, Utah, and Virginia. One State—Georgia—reported 441 homes inspected but did not report the number of inspections. During the same period 1,538 inspections were made of 1,383 infant homes by the child-hygiene bureaus of 10 States: Idaho, Kansas, Kentucky, Nebraska, New Hampshire, New Jersey, New York, Ohio, Tennessee, and Texas. Georgia reported 731 homes inspected but did not report the number of inspections.

### MIDWIVES

Work to improve midwives has been continued by many States. Nurses and physicians have been assigned to this work by the child-hygiene bureaus and divisions or by the personnel of county health departments. In some places the classes conducted in earlier years of maternity and infancy work have been succeeded by regular supervision by field workers and regular meetings of midwives' clubs which State or county supervisors of midwives attend. During the year ended June 30, 1928, classes numbering 1,653 were organized in 11 States: Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, North Carolina, South Carolina, Tennessee, Texas, and Virginia. A few States did not report the number of classes organized. (Table 4.) The number of midwives reported enrolled was 10,056; the number reported as completing the course was 1,594. Some States did not report the number completing the course, and in a number of States the work was continuous instead of consisting of a definite number of lessons. In the States reporting number of lessons 6 to 10 were usually given.

TABLE 4.—Classes conducted for instruction in maternal, infant, and child hygiene reported by 39 States and the Territory of Hawaii cooperating under the maternity and infancy act during the year ended June 30, 1928

States and Territory cooperating	Classes for mothers			Classes for girls			Classes for midwives		
	Classes organized	Mothers enrolled	Mothers completing course	Classes organized	Girls enrolled	Girls completing course	Classes organized	Midwives enrolled	Midwives completing course
Total.....	1,318	29,637	18,409	1,286	23,661	10,985	1,653	10,056	1,594
Alabama.....				101	1,514	53	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Arizona.....	17	407	407	4	74	32			
Arkansas.....	108	372	( <sup>1</sup> )	76	385	( <sup>1</sup> )	314	2,436	
California.....	81	2,030	1,650	49	321	321			
Colorado.....	14	79	62	33	175	162			
Delaware.....	12	99		19	358	313	( <sup>2</sup> )	( <sup>2</sup> )	
Florida.....							937	<sup>3</sup> 3,432	( <sup>1</sup> )
Georgia.....	66	1,904	288	191	4,968	( <sup>1</sup> )	194	1,764	821
Hawaii.....				4	84	37			
Indiana.....	<sup>4</sup> 141	<sup>4</sup> 7,824	<sup>4</sup> 7,824						
Kentucky.....							15	231	231
Louisiana.....	5	116	63	6	163		74	689	154
Maine.....	5	96		41	603	344			
Maryland.....	49	726	521	9	161	161	2	7	7
Michigan.....	98	<sup>5</sup> 1,300	1,080	158	3,605	3,605	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )
Minnesota.....	42	1,567	515						
Mississippi.....							( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Missouri.....	337	7,570	3,370	42	488	84			
Montana.....				6	118	( <sup>1</sup> )			
Nebraska.....	37	( <sup>1</sup> )	164	18	446	( <sup>1</sup> )			
Nevada.....	10	142		14	166	( <sup>1</sup> )			
New Hampshire.....	15	260	260	20	250	250			
New Jersey.....	1	15	15	46	632	420	( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> )
New Mexico.....	8	76	791	35	686	677			
New York.....	108	1,684	950	15	323	198			
North Carolina.....							24	276	180
Ohio.....	1	4	( <sup>1</sup> )	95	<sup>8</sup> 2,197	2,089			
Oklahoma.....	4	102	96	<sup>9</sup> 32	550	534			
Oregon.....	2	28		17	( <sup>1</sup> )	( <sup>1</sup> )			
Rhode Island.....	1	18							
South Carolina.....	6	87	33	9	160	118	24	237	104
South Dakota.....	2	61	<sup>10</sup> 267	( <sup>11</sup> )	( <sup>11</sup> )	( <sup>11</sup> )			
Tennessee.....	4	76		2	31	31	14	311	28
Texas.....	53	932	267	104	2,342	1,301	15	419	65
Utah.....	3	72	<sup>3</sup> 158						
Vermont.....				5	55	55			
Virginia.....	23	478	( <sup>1</sup> )	42	1,447	94	40	254	4
West Virginia.....	53	1,049	( <sup>1</sup> )	83	1,212	( <sup>1</sup> )			
Wisconsin.....				( <sup>12</sup> )					
Wyoming.....	<sup>13</sup> 12	463	338	<sup>13</sup> 10	147	106			

<sup>1</sup> Not reported.<sup>2</sup> 16 classes continued from previous year with 185 midwives enrolled (including 3 enrolled during year under review).<sup>3</sup> Includes some carried over from previous year.<sup>4</sup> Includes 1,710 girls in 10 colleges where course was given.<sup>5</sup> 50 midwives enrolled in classes for women completed the course.<sup>6</sup> 9 organizations meeting monthly; membership 399; total attendance, 1,042.<sup>7</sup> Includes 15 carried over from previous year.<sup>8</sup> Includes 45 boys.<sup>9</sup> Includes 4 classes for boys and girls in public schools.<sup>10</sup> Includes 196 carried over from previous year.<sup>11</sup> 2 lessons to 31 high-school girls in 1 town; 2 lessons to 100 high-school girls in another town; 1 lesson to 63 normal-school students.<sup>12</sup> Infant-hygiene classes are conducted in the public schools.<sup>13</sup> Conducted by a member of the United States Children's Bureau staff lent to the State.

## CLASSES FOR ADULTS IN INFANT AND PRENATAL CARE

Mothers' classes, or classes for women in infant and prenatal care, were conducted in 31 States: Arizona, Arkansas, California, Colorado, Delaware, Georgia, Indiana, Louisiana, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon,

Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, and Wyoming. These States organized 1,318 classes; 29,637 women were enrolled in classes in the 30 States reporting enrollment, and 18,409 completed the course in the 21 States reporting on this point. The number of lessons varied; usually 6 to 10 were given. Indiana led in this work with 7,824 women enrolled, Missouri was next with 7,570, and California third with 2,030. Georgia, Michigan, Minnesota, New York, and West Virginia each enrolled more than 1,000 women in such classes during the year ended June 30, 1928. (Table 4.)

### CLASSES FOR GIRLS IN INFANT AND CHILD CARE

Girls 10 to 15 years of age were instructed in classes in infant and child care in the Territory of Hawaii and 31 States: Alabama, Arizona, Arkansas, California, Colorado, Delaware, Georgia, Hawaii, Louisiana, Maine, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming. The number of classes organized was 1,286, the number of girls enrolled 23,661, and the number completing the course 10,985. The number of lessons in the course varied; several States gave 24 to 30, but usually 10 to 12 were given. Georgia had an enrollment of 4,968 girls, the largest number enrolled in any one State. Michigan was next with an enrollment of 3,605. Ohio and Texas each enrolled more than 2,000 girls, and Alabama, Virginia, and West Virginia each enrolled more than 1,000. (Table 4.) A number of States conducted such classes in connection with the public schools. A few, as Ohio and Oklahoma, included boys in some of the classes. In Wisconsin the classes in infant and child care are now a part of the regular public-school curriculum.

### INSTRUCTION OF SPECIAL GROUPS IN MATERNAL AND INFANT CARE

Physicians, nurses, and teachers have been among the special groups instructed in maternal or infant care in the States cooperating under the maternity and infancy act. In four States—Kentucky, New York, Oklahoma, and Tennessee—graduate courses in pediatrics and also in obstetrics have been conducted for physicians. Public-health nurses have received special instruction through institutes and other group meetings, through loan libraries, and through training centers. Teachers have been given instruction in infant and maternal care to prepare them to conduct similar work in the schools; Kansas, New Jersey, Oklahoma, and Wisconsin have conducted courses for teachers. Indiana conducted such courses in 10 colleges. Fathers have been included in a few of the adult groups receiving instruction in maternal and infant care.

### TALKS AND LECTURES

Information relating to maternal, infant, and child care and hygiene was given through talks and lectures in the Territory of

Hawaii and all except one of the States cooperating under the maternity and infancy act. A total of 23,033 talks and lectures were given in 1928; 20,073 were addressed to lay groups. Special lectures or talks were given to nurses and physicians—721 to nurses in 36 States and Hawaii, 352 to physicians in 29 States (this number includes a few to dentists). (Table 5.) Radio talks were broadcast 106 times in 17 States: Colorado, Georgia, Iowa, Kansas, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, New York, Ohio, Oregon, Pennsylvania, Tennessee, Virginia, and Washington.

### PRENATAL LETTERS AND CORRESPONDENCE COURSES

Information on prenatal care and preparation for confinement was sent to expectant mothers through a series of prenatal letters (usually nine in number, one mailed each month) by 24 States—Arizona, California, Delaware, Idaho, Kansas, Kentucky, Louisiana, Maine, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, North Carolina, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Utah, West Virginia, and Wisconsin. The number of new names enrolled in these States during the year under review was 37,532, and the number of sets of letters distributed was 35,721. North Carolina reported 9,522 new names enrolled, the largest number enrolled by any one State. Oklahoma was next with 7,220 new names enrolled. (Table 5.)

Correspondence courses were conducted by four States: Minnesota, Virginia, Washington, and West Virginia. Instruction was given in both maternal and infant care through these courses.

TABLE 5.—*Educational work conducted through talks and lectures, prenatal letters, and distribution of literature in the States and Territory of Hawaii cooperating under the maternity and infancy act during the year ended June 30, 1928*

States and Territory cooperating	Talks and lectures					Prenatal letters		Pieces of literature distributed
	Total	Number given to—				New names enrolled	Sets distributed	
		Physicians	Nurses	Lay groups	Radio audiences			
Total .....	23,033	352	721	20,073	106	37,532	35,721	6,176,232
Alabama.....	1,601	(1)	(1)	(1)	-----	-----	(1)	(1)
Arizona.....	86	1	2	83	-----	600	460	64,435
Arkansas.....	863	5	4	854	-----	(1)	(1)	131,273
California.....	102	3	22	77	-----	1,492	3,107	92,108
Colorado.....	127	2	15	109	1	-----	-----	10,600
Delaware.....	90	6	2	82	-----	472	369	47,758
Florida.....	166	4	17	145	-----	-----	-----	34,032
Georgia.....	382	5	3	349	25	-----	-----	105,875
Hawaii.....	7	-----	1	6	-----	-----	-----	2,600
Idaho.....	39	2	-----	37	-----	474	499	7,096
Indiana.....	885	12	3	870	-----	-----	-----	176,473
Iowa.....	<sup>2</sup> 214	<sup>2</sup> 35	7	160	12	-----	-----	73,600
Kansas.....	53	8	4	39	2	73	355	212,376
Kentucky.....	1,112	35	150	927	-----	1,850	4,000	317,559
Louisiana.....	984	-----	-----	984	-----	645	645	33,269
Maine.....	262	-----	23	235	4	1,151	1,313	425,946
Maryland.....	93	2	-----	85	6	-----	-----	127,850
Michigan.....	257	-----	8	248	1	3,094	3,497	359,047

<sup>1</sup> Not reported.

<sup>2</sup> Includes talks to dentists.

TABLE 5.—*Educational work conducted through talks and lectures, etc.*—Contd.

States and Territory cooperating	Talks and lectures					Prenatal letters		Pieces of literature distributed
	Total	Number given to—				New names enrolled	Sets distributed	
		Physicians	Nurses	Lay groups	Radio audiences			
Minnesota	108	11	22	73	2	1, 181	1, 181	270, 112
Mississippi	6, 277	50	20	6, 207				50, 000
Missouri	606	12	5	584	5	925	712	780, 450
Montana	1, 124		5	1, 119		774	774	211, 116
Nebraska	42	2	7	32	1	691	711	85, 055
Nevada							184	2, 380
New Hampshire	416		12	404		540	<sup>3</sup> 1, 451	182, 214
New Jersey	2, 641	7	84	2, 550				65, 000
New Mexico	118		3	115				35, 189
New York	232	3	64	161	4			302, 989
North Carolina	( <sup>1</sup> )			( <sup>1</sup> )		9, 522	4, 191	127, 290
North Dakota	17	1	2	14				17, 937
Ohio	440	14	2	423	1			227, 500
Oklahoma	<sup>4</sup> 519	20	27	435		7, 220	5, 225	353, 885
Oregon	<sup>5</sup> 331	37	66	210	17	1, 046	1, 017	50, 000
Pennsylvania	122			121	1			147, 902
Rhode Island	30		1	29				37, 368
South Carolina	158	4	20	134			10	60, 000
South Dakota	16		1	15		634	722	23, 638
Tennessee	546	13	3	529	1	416	416	50, 351
Texas	424	12	20	392				66, 536
Utah	297	5		292		665	429	25, 000
Vermont	36		1	35				7, 692
Virginia	131		10	113	8			228, 836
Washington	90	17	22	36	15			18, 114
West Virginia	696		15	681		1, 677	1, 285	74, 583
Wisconsin	<sup>6</sup> 143	15	48	79		2, 390	3, 168	413, 191
Wyoming	150	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )			10, 907

<sup>1</sup> Not reported.<sup>3</sup> During 6 months.<sup>4</sup> Includes 28 to dentists.<sup>5</sup> Report incomplete; includes 1 to dentists.<sup>6</sup> Includes 1 to dentists.

## DISTRIBUTION OF LITERATURE

All the cooperating States (except one) and the Territory of Hawaii reported distributing literature relating to the care and hygiene of mothers, infants, and preschool children (including both State and Federal publications). More than 6,000,000 pieces of literature were distributed by the Territory and the 44 States reporting. (Table 5.) Nineteen States each reported distributing more than 100,000 pieces during the year under review. Missouri led with a distribution of 780,450 pieces, Maine was next with 425,046 pieces, and Wisconsin third with 413,191.

Twenty-two States—Arizona, Colorado, Delaware, Florida, Kansas, Kentucky, Maryland, Michigan, Mississippi, Missouri, Montana, New Hampshire, New Mexico, New York, North Dakota, Pennsylvania, South Carolina, South Dakota, Utah, Virginia, Wisconsin, and Wyoming—and the Territory of Hawaii sent literature on the care of the baby to the parents of all babies whose births were registered in State bureaus or divisions of vital statistics. In two States—Rhode Island and New Jersey—literature was distributed by the public-health nurses who visited the newborn babies. A few other States sent a birth-registration card with an offer to supply literature

on request. Maryland, Missouri, and New York sent literature except for babies born in the large cities. Reports received indicate that literature on infant care was sent to the parents of half the babies born during the year.

### EXTENSION OF THE UNITED STATES BIRTH AND DEATH REGISTRATION AREAS

Five States—Alabama, Georgia, Louisiana, Missouri, and Oklahoma—were admitted to the United States birth-registration area during the year under review.<sup>3</sup> This made 42 States and the District of Columbia in the area on June 30, 1928, and included 91.3 per cent of the total estimated population of the United States. Two States—Georgia and Oklahoma—were admitted to the United States death-registration area during the year under review.<sup>3</sup> This made 44 States and the District of Columbia in the area on June 30, 1928, and included 95.4 per cent of the total estimated population of the United States. The staffs of the State child-hygiene bureaus and divisions gave assistance in all the States admitted to the birth and death registration areas, and they were actively assisting to increase the registration in States not admitted.

### SURVEYS AND CAMPAIGNS

During the year under review 48 surveys of conditions relating to maternal and infant welfare were made in 25 States—Alabama, Arkansas, California, Colorado, Delaware, Georgia, Idaho, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Oklahoma, Oregon, South Dakota, Tennessee, Virginia, West Virginia, and Wisconsin. These included surveys of hospitals, midwives, milk supplies, maternal and infant mortality, and various other matters affecting the welfare of mothers and children.

A total of 68 campaigns, either state-wide or restricted to counties or smaller areas, were reported by 29 States: Arkansas, California, Colorado, Delaware, Georgia, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Mexico, New York, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Washington, and West Virginia. They included campaigns for better milk supplies, for more complete registration of births, for extension of maternity and infancy work through the establishment of county and community nursing service, other improvements in conditions relating to the welfare of mothers and babies, and "get ready for school" campaigns for the preschool child.

### MATERNAL-MORTALITY STUDY

Progress has been made in the study of maternal deaths in the calendar years 1927 and 1928. During the year under review the study was under way in 12 States: Alabama, Kentucky, Maryland, Michigan, Minnesota, Nebraska, New Hampshire, Oregon, Rhode

<sup>3</sup> Three more States were admitted after the close of the fiscal year under review (Colorado in August and South Carolina in October, 1928, and Nevada in April, 1929). Nevada was admitted to the death-registration area also in April, 1929.

Island, Virginia, Washington, and Wisconsin. Three other States—California, North Dakota, and Oklahoma—made plans to begin the study after the close of the fiscal year under review.

In all these States the study is being made in cooperation with the State departments of health (on the request of the State medical societies) and in cooperation with the United States Children's Bureau. Physicians assigned by the bureau are taking the schedules in 9 States: Alabama, Kentucky, Maryland, Nebraska, New Hampshire, Oregon, Rhode Island, Virginia, and Washington. Three States—Michigan, Minnesota, and Wisconsin—are using the services of physicians on their own staffs.<sup>4</sup> The tabulations will be made by the Children's Bureau. (See p. 157.)

### EXPANSION OF ACTIVITIES

The 45 cooperating States and the Territory of Hawaii contain 2,953 counties or parishes. During the period of their cooperation under the maternity and infancy act some maternity and infancy work has been done in 2,671 of these counties. During the year under review some maternity and infancy work was done in 2,074 counties. Twenty-seven States reported maternity and infancy work in every county since the beginning of their cooperation under the act. During the year under review maternity and infancy work was done in every county in 14 States. The work has been extended during the year to 211 counties; there was an increase of 16 counties in the cooperating States due to the increase in the number of States cooperating under the act and reporting work in the year.

Twenty-three States reported 171 counties or communities as assuming (since the beginning of their cooperation under the act) the responsibility for maternity and infancy work initiated or assisted by the State child-hygiene bureaus or divisions, and one other State reported 7 counties as assuming the responsibility except that clinicians from the State staff gave assistance. This in turn released funds for extension of work to other counties or for use in new activities.

### ORGANIZATIONS COOPERATING IN THE MATERNITY AND INFANCY WORK

The support given to the State agencies administering the maternity and infancy act by state-wide organizations and groups as well as by their local component groups has made it possible to extend activities to new fields and to include larger numbers of mothers and infants in the scope of the work than would have been possible without the cooperation of such organizations. Types of cooperation have varied from formal approval and indorsement of the maternity and infancy act by groups to actual assistance in activities of the State program by physicians, dentists, and nurses at conferences and centers. Financial assistance or support of pieces of work begun under the act has also been undertaken by private as well as public

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<sup>4</sup> In the fall of 1928 California and Oklahoma began the collection of data in regard to 1928 maternal deaths and North Dakota the collection of data in regard to 1927 and 1928 maternal deaths. The child-hygiene bureaus and divisions of these States will make the study with their own staffs.



agencies. State and local associations have sponsored special activities and given assistance to them. The cooperating state-wide organizations have included during 1928 other State departments or bureaus, professional groups, women's organizations, and fraternal and service organizations. Forty-four States reported cooperation received from state-wide organizations, and one reported cooperation from local groups. The Territory of Hawaii reported cooperation from organizations and also from the physicians and nurses of the sugar plantations.

Forty States reported assistance from the State parent-teacher association (usually in connection with the preschool round-up), the State federation of women's clubs cooperated in 29 States, the State league of women voters in 21 States, and the American Red Cross in 15 States. The extension service of State universities or State colleges and the State tuberculosis association each was reported as assisting in 13 States. Eleven States reported cooperation by the State department of education and 11 by the State medical association. Two States reported cooperation given by the State medical association's committee on maternal welfare.

Assistance by the State Woman's Christian Temperance Union and assistance by the State dental society were each reported by 7 States, the American Legion auxiliary by 6 States, and the American Legion by 5 States. Four States reported cooperation by the State public-health association, and one State by the State public-health and tuberculosis association.

Two States reported cooperation from each of the following organizations: American Association of University Women, women's auxiliary of the State medical association, business and professional women's club, State nurses' association, and Farm Bureau. In addition the following agencies were reported as cooperating by at least one State: State child-welfare department, State board of charities and corrections, State board of health (Colorado), State university, State agricultural college, polytechnic institute, psychopathic hospital, State fair association, men's service clubs, Society for Crippled Children, visiting-nurse association, Mormon Mission and Mormon Relief Society, board of missions, Joint Legislative Council, State health council, State chamber of commerce, Young Men's Christian Association, Young Women's Christian Association, Needlework Guild, fraternal association, State chapter of the Daughters of the American Revolution, State grange, State board of control, State development board, rural women's clubs, Council of Jewish Women, Catholic Daughters of America, State association of social workers, schools, churches, county medical societies, many local clubs and societies, and school officials.

## SUMMARY OF RESULTS OF OPERATION OF THE MATERNITY AND INFANCY ACT

The extension of Federal funds to the States and Territory accepting the provisions of the maternity and infancy act made expansion of activities possible in States that already had child-hygiene bureaus or divisions as well as in the 10 States and the Territory in which such agencies were created after the passage of the act. Many of the already existing child-hygiene bureaus and divisions were hardly more than nominal and had very inadequate funds. Even in those States that did not accept Federal funds immediately after the passage of the act in 1921 the matter was a subject for discussion, and larger State appropriations for child-hygiene work were made. This was the immediate result of wider interest in the education of the public as to the possibilities and importance of public-health work for mothers and babies. The statement holds true not only for States that later accepted the provisions of the act but also for the three States that have not accepted its provisions.

In 1918, when the first maternity and infancy bill was introduced in Congress, infant-hygiene work was in progress mainly in urban areas. Its wide extension to rural areas has been coincident with interest in the maternity and infancy bill and operation of the maternity and infancy act in the large majority of the States. Programs of maternal welfare in rural areas have been developed largely within this 10-year period.<sup>1</sup>

### WORK WITH RACIAL GROUPS

Our complex population is a factor that has influenced infant and maternal mortality rates in the United States. Practically every State has initiated work directed toward the problems of a specific foreign-born people or racial group that has composed part of its population. Michigan, New Jersey, New York, and Pennsylvania have given attention to the regulation, supervision, and instruction of white midwives who deliver many of the recent immigrants among the white women. Nurses also visited the homes of foreign-born mothers and gave instruction in maternal, infant, and child care. Rhode Island staff workers met incoming steamers and established contacts with incoming foreign-born mothers and babies.

The States of the Southwest, as Arizona, California, New Mexico, and Texas, have given special attention to the Spanish-speaking population. Literature on maternal, infant, and child care was translated into Spanish for distribution among the Spanish-Ameri-

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<sup>1</sup> See *Some Results of Five Years of Work under the Maternity and Infancy Act in The Promotion of the Welfare and Hygiene of Maternity and Infancy, Fiscal Year 1927*, pp. 30-45 (U. S. Children's Bureau Publication No. 186, Washington, 1928).



1. MIDWIVES OF THE OLD TYPE. 2. A MIDWIFE OF THE NEW TYPE. 3. AT THE INSTITUTE FOR NEGRO MIDWIVES. 4. A NURSE MIDWIFE (GRADUATE OF BELLEVUE HOSPITAL) WHO SERVED AS INSTRUCTOR IN THE INSTITUTE



TYPE OF HOME IN A SPARSELY SETTLED STATE (NEW MEXICO) INTO WHICH LITERATURE ON INFANT AND PRENATAL CARE IS SENT; CHILDREN (MISSOURI) SUCCESSFUL IN A SIX-POINT COMPETITION (ADJUDGED NORMAL OR CORRECTED IN VISION, HEARING, THROAT, TEETH, POSTURE, AND WEIGHT); AND A CLASS FOR INDIAN GIRLS (NEBRASKA) IN INFANT AND CHILD CARE

can and Mexican populations in Arizona, California, and New Mexico. Nurses in all these States visited the homes of Spanish-speaking families and gave instruction in infant and maternal care. In New Mexico special attention was given to the instruction of the Spanish-speaking midwives who attend the Spanish-American and Mexican women.

Certain States have done special work with the Indians through cooperation with the United States Indian Service. Minnesota, Nebraska, and Oklahoma have conducted classes in infant care among Indian girls. Michigan, Minnesota, and Montana have conducted health conferences for Indian babies and preschool children. Minnesota employed Indian nurses for full-time maternity and infancy work on the Indian reservations, Nebraska detailed a public-health nurse for full-time work among Indians, and other States have given occasional service to Indians within their borders.

In the Territory of Hawaii the different racial groups have been considered in the planning of the maternity and infancy work. Health conferences regularly conducted at centers have reached Hawaiian, Filipino, Japanese, Chinese, Portuguese, and American children. Some of these racial groups had extremely high infant mortality rates, and reductions have been observed since the conference work was begun.

Practically all the States with large negro populations have made efforts to improve the hygiene and care of negro mothers and babies. To the supervision, regulation, and instruction of negro midwives—as in Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, and West Virginia—may be ascribed some of the reduction in maternal and infant mortality rates in given areas.

Special instruction in hygiene and nutrition has been given to negro women in Florida. Maryland has conducted child-health conferences among the negroes through the employment of negro physicians for the purpose. Mississippi has conducted classes in hygiene and infant care for negro girls. Prenatal care was given negro women who attended the prenatal conferences at the county centers. South Carolina has provided a four weeks' course of practical instruction in nursing care, nutrition, and bedside instruction in obstetrics for negro midwives. Tennessee employed a negro woman physician to supervise and instruct negro midwives, who in addition conducted health conferences for negro infants and preschool children. Virginia conducted institutes for midwives and for "doctors' helpers" for negro women. Negro nurses have served on the State staff or are detailed to county work in a number of States, including Alabama, Georgia, Maryland, Mississippi, South Carolina, and Texas. In Texas the work of the State itinerant negro nurses was so appreciated that the negroes of one county raised the necessary funds to maintain a negro nurse. The negro nurses employed are usually well trained in nursing schools and through their direct contact in the homes assist in improving standards of living, sanitation, and hygiene among the people of their race.

## EXTENSION OF THE BIRTH AND DEATH REGISTRATION AREAS

Since the close of 1922 (the first year of operation of the maternity and infancy act) 13 States have been admitted to the United States birth-registration area—Alabama, Arizona, Arkansas, Florida, Georgia, Idaho, Iowa, Louisiana, Missouri, North Dakota, Oklahoma, Tennessee, and West Virginia—and 8 States have been admitted to the death-registration area: Alabama, Arizona, Arkansas, Georgia, Iowa, North Dakota, Oklahoma, and West Virginia. The staffs of the State divisions and bureaus of child hygiene have aided in the campaigns for better registration of births and deaths in every State (except Iowa) admitted to the area since 1922. (See footnote 3, p. 23, for States admitted since June 30, 1928.)

## PROGRESS IN EDUCATION OF MIDWIVES

Classes for midwives, conducted by nurses, have been a feature of the maternity and infancy work since funds were first made available to the States under the Federal maternity and infancy act. Most of these classes have been for negro women. They have included instruction in the hygiene of pregnancy, the necessity for cleanliness, the preparation for delivery, the method of conducting delivery, the importance of calling a physician for complicated cases, the use of a prophylactic in the eyes of the newborn, and the general care of the newborn. Practical demonstrations formed part of the course in many of the classes and included the making and sterilizing of pads, dressings, and supplies needed at confinement, preparation of the obstetrical bed, bathing the mother, and caring for the baby. In at least one State the technique of delivery was demonstrated by the use of a manikin. This work has been valuable in improving the standards of practice among the midwives and eliminating those who were unfit, although it has not given the midwives any practical training under supervision in the technique of conducting a normal delivery.

State directors of the maternity and infancy work in some parts of the country recognize that social and economic conditions make the midwife necessary in their States for many years to come. Consequently several of the directors are seeking a means of making available courses for midwives that will combine theoretical instruction and practical experience in midwifery. Considerable progress in this type of work has been made in Kentucky and South Carolina. In Kentucky a three months' intensive course in midwifery for white midwives was inaugurated a little more than a year ago at a small hospital in a mountain section that has facilities for training three at a time. Eight women had completed the course by June 30, 1928, and many others were awaiting admission. In South Carolina a beginning was made in 1927 by the provision of a training course for negro midwives. The hospital of a negro school was lent for this purpose, a local physician volunteered his services for all deliveries, and a nurse from the staff of the State bureau of child hygiene and public-health nursing had general charge of the course. In 1928 the institute was conducted for a longer period and on a more extensive scale, about 30 midwives being registered for each of the three months of the institute. A negro graduate of the Bellevue Hospital training

school for midwives was employed to assist the nurse in charge, and each nurse on the bureau staff was assigned to the work for a 2-week period. The same physician who volunteered his services the preceding year delivered the abnormal cases and the negro nurse-midwife the normal cases. An out-patient department was organized, the student midwives going with an instructor to deliver patients in their homes and give postpartum care. Examinations were held and certificates were awarded to those who passed.

In 1925 Virginia began to conduct 1-week institutes for "doctors' helpers," which were attended by midwives as well as by other women. The course has consisted each year of lectures by physicians and other experts on health subjects, with particular emphasis on maternal and infant hygiene and of practical demonstrations of some of the subjects considered. Separate institutes are conducted for white and for negro women.

In 1926 Tennessee employed a negro woman physician to conduct classes for negro midwives, and this work is still in progress.

The midwife problem is by no means confined to the South. In the North and West many women, mostly of foreign birth, are attended at confinement by midwives. In the West many sparsely settled sections do not have the services of a physician, and the expectant mother must look to a friendly neighbor to act as midwife at the time of confinement.

In New Jersey (in which State the midwives must be graduates of a legally incorporated school of midwifery or of a maternity hospital approved by the State board of medical examiners) arrangements were made in 1928 for an advanced course for licensed midwives at the Jersey City Hospital. The course was arranged to provide practical training in the maternity wards, nursery, labor and delivery rooms, and classroom of the hospital, one week to be spent in each department. Although only 3 midwives could be accommodated in the hospital at one time, 14 completed the course during the year.

In 1922 Pennsylvania employed two women physicians (one for a short period only) to devote full time to teaching and supervising the midwives in four counties in the coal regions. Later another woman physician was employed, and 10 counties are now covered by this work. Its extent is indicated by the fact that 7,134 deliveries were reported as attended by midwives in nine of these counties in 1927. (In the tenth county the work had been in progress only a short time.) Only nine maternal deaths were reported among the women attended by the midwives, though all deaths of mothers attended by midwives at any time during confinement were counted as deaths in the midwives' practice even if a physician also attended the case and signed the death certificate.

## REDUCTION OF MORBIDITY AND PREVENTION OF DISEASE

Statistics on morbidity are not available except for certain reportable diseases or in the event of special studies. Consequently no precise statement can be made in regard to maternal and infant morbidity; but, as mortality presupposes morbidity and usually follows an illness, mortality rates are some index of morbidity. Therefore it is a fair assumption that lower maternal and infant mortality rates reflect fewer illnesses of both mothers and babies. There can be

no question that better care and hygiene for mothers and children have added to the sum total of human well-being and of human happiness.

Many States have included among their maternity and infancy activities special preventive work. Some of this has been directed against diseases that cause high mortality rates for children, some against diseases that, though not fatal, cause physical handicaps or impairments. The inspection, supervision, and regulation of milk supplies has been one of these special activities in some States. The importance of sun baths and cod-liver oil in the prevention and cure of rickets has been stressed in the conference work, in nurses' visits to the homes, and in the literature distributed. The collection by maternity and infancy workers of specimens for examination for hookworm and other parasites has contributed to improvement in the health of small children. Ampules of nitrate of silver for prophylaxis against ophthalmia neonatorum have been distributed free to attendants at childbirth in many States, or the distribution has been promoted through financial assistance. The use of the prophylactic, especially by midwives, has increased greatly, and where data have been obtainable the indications are that blindness from ophthalmia neonatorum has decreased considerably.

State divisions and bureaus of child hygiene have contributed to and assisted in toxin-antitoxin campaigns and have emphasized the necessity for immunization of the year-old infant and the preschool child against diphtheria. Many have included preventive measures against diphtheria, smallpox, and typhoid fever in the "get ready for school" campaigns for the preschool child. A lower incidence for such diseases appears to have followed aggressive campaigns of this character.

Goiter prevention has been an objective in certain States having a high incidence of goiter, as those on the Great Lakes and certain Rocky Mountain States. Utah and Michigan have been especially active in surveys of goiter and efforts for prevention. In January, 1924, the Michigan State Department of Health made analyses of water supplies in the State and found insufficient iodine for human requirements in all samples examined. At the same time a survey was made of the prevalence of goiter among school children in four counties, and the field staff of physicians and nurses of the State bureau of child hygiene and public-health nursing was lent to aid in the survey, with the understanding that any preventive program should include the prevention of goiter in the expectant mother. The data obtained in the four counties were as follows:

County	Iodine content per billion parts of water	Percentage incidence of goiter among school children examined
Houghton County.....	None.	64.4
Wexford County.....	0.05	55.6
Midland County.....	7.30	32.7
Macomb County.....	8.70	26.0



A state-wide educational campaign for the use of iodized salt on the table and in cooking was instituted by the Michigan Department of Health, resulting in the very general use of iodized salt not only in Michigan but also in other States of the Great Lakes region. A resurvey of two of the counties (Wexford and Midland) in 1928 showed that in Wexford County the percentage of goiter had dropped from 55.6 in 1924 to 17.2 in 1928 and in Midland County it had dropped from 32.7 in 1924 to 8.8 in 1928. It was learned in this survey that iodized salt was used in 91 per cent of the homes of the public-school children in Midland County. According to physicians in Houghton County, babies born with goiter were not uncommon before the goiter-prevention work, but to date the interested physicians have not seen a single case of congenital goiter when the mother has used iodine. In view of the impairment to health in later life from thyroid-gland disturbances and the menace to life itself in the congenital type of goiter, also the strain on the thyroid gland of the mother during pregnancy, the information obtained by the two surveys and the confirmation of the worth of the preventive measures should be of great value in decreasing maternal and infant morbidity.<sup>2</sup>

### THE INFANT MORTALITY RATE

Infant mortality rates for the whole registration area as of 1927 are not strictly comparable with the rates for the area as of 1922 because of the admission of 11 States to the birth-registration area between January 1, 1923, and December 31, 1927. There was a reduction in the infant mortality rates for the birth-registration area of 1927 as compared with that of 1922. (See Tables III and IV, Appendix C, pp. 172, 174.) In 1922 the mortality rate (deaths of infants under 1 year of age per 1,000 live births) was 76; in 1927 the rate was 65, a saving of 11 infants in every 1,000 born alive for the whole area. In 1927, 24,500 babies who would have died if the rate of 1922 had continued survived their first year of life. A somewhat greater reduction appears if the States that were in the area and remained in from 1922 through 1927 are considered. (Table 6.) The birth-registration area of 1922 included 30 States and the District of Columbia. One State (South Carolina) was dropped from the birth-registration area in 1925. Three of the 30 States have never cooperated with the Federal Government under the maternity and infancy act and 3 others began cooperating in the later years of the operation of the act.

A comparison of infant mortality rates in the expanding birth-registration area for white and colored babies shows a reduction among both groups in 1927 as compared with 1922. The rate for the area as a whole was 73 for white babies in 1922 and 61 in 1927. For colored babies the rate was 110 in 1922 and 100 in 1927. In each of the States that were in the birth-registration area in 1922 and 1927 and that had more than 2,000 colored births annually<sup>3</sup> the rate for

<sup>2</sup> Kimball, O. P.: The Efficiency and Safety of the Prevention of Goiter. *Journal of the American Medical Association*, vol. 91, No. 7 (Aug. 18, 1928), pp. 454-460. See also editorial, *Journal of the American Medical Association*, vol. 91, No. 22 (Dec. 1, 1928), p. 1720.

<sup>3</sup> California, Illinois, Kentucky, Maryland, Mississippi, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Virginia, and the District of Columbia.

both white and colored babies was lower in 1927 than in 1922, except in North Carolina and Virginia. In these two States the rate for the colored group was higher in 1927. (Table IV, Appendix C, p. 174.)

An analysis of the principal groups of causes of infant mortality for the States in the birth-registration area in 1922 (excluding South Carolina) shows a lower rate in 1927 than in 1922 for each group of causes except external causes (for which the rate was the same in both years). The greatest reduction is shown in the group of gastrointestinal diseases, with a rate of 12.7 per 1,000 live births in 1922 and 8.1 in 1927. Respiratory diseases stood next with a rate of 13.7 in 1922 compared with 10.3 in 1927. The rates due to deaths from natal and prenatal causes generally showed slight decreases from 1922 to 1927; the 1927 figure (33.7 deaths of infants per 1,000 live births) was 6.9 per cent lower than that for 1922 (36.2).

TABLE 6.—*Infant mortality rates (deaths of infants under 1 year of age per 1,000 live births), by specified groups of causes, in the United States birth-registration area as of 1922,<sup>1</sup> exclusive of South Carolina; 1922-1927*

Causes of death	1922	1923	1924	1925	1926	1927
All causes.....	75.7	76.6	70.3	71.8	73.3	64.0
Natal and prenatal causes <sup>2</sup> .....	36.2	35.9	35.3	35.0	35.1	33.7
Gastrointestinal diseases <sup>3</sup> .....	12.7	12.5	10.1	12.0	10.3	8.1
Respiratory diseases <sup>4</sup> .....	13.7	13.9	11.9	12.2	14.2	10.3
Epidemic and communicable diseases <sup>5</sup> .....	3.9	5.3	4.3	3.6	4.8	3.5
External causes.....	.9	.9	1.0	1.0	1.1	.9
Unknown or ill-defined diseases.....	2.4	2.3	2.3	2.2	2.3	2.2
All other causes <sup>6</sup> .....	5.9	5.7	5.6	5.8	5.6	5.3

<sup>1</sup> Including California, Connecticut, Delaware, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, Virginia, Washington, Wisconsin, Wyoming, and the District of Columbia. These are all the States that were in the birth-registration area every year from 1922 to 1927.

<sup>2</sup> Includes premature birth, congenital debility, injuries at birth, other diseases of early infancy, congenital malformations, syphilis, tetanus.

<sup>3</sup> Includes diseases of the stomach, diarrhea and enteritis, dysentery.

<sup>4</sup> Includes bronchitis, bronchopneumonia, pneumonia, influenza.

<sup>5</sup> Includes measles, scarlet fever, whooping cough, diphtheria, erysipelas, meningococcus meningitis, tuberculosis of the respiratory system, tuberculosis of the meninges, other forms of tuberculosis.

<sup>6</sup> Includes convulsions and other causes of death.

Reduction in infant mortality due to diarrhea and enteritis and to respiratory diseases reflects the work done in disseminating information on the importance of breast feeding and the proper preparation of simple formulas of cow's milk, the value of good routine in the care of the baby, sunshine, fresh air, and the introduction into the infant's dietary of the right foods at the right time. Reduction in mortality from natal and prenatal causes in 1927 also reflects the wider knowledge of the care of the baby, the prenatal care the mother receives, and a greater attention to care at time of childbirth.

The stillbirth rates have remained practically the same for every year from 1922 to 1927 for the expanding birth-registration area. The stillbirth rates per 100 live births for 1922 to 1927 were as follows: 1922, 1923, and 1924, 3.9; 1925 and 1926, 3.8; 1927, 3.9.

### THE MATERNAL MORTALITY RATE

The maternal mortality rate for the birth-registration area in 1922 was 66.4 (deaths of mothers from puerperal causes per 10,000 live births); in 1927 the rate was 64.7. The reduction in maternal

mortality was largely in the rural areas, the rate being 59.5 in 1922 and 55.3 in 1927—a saving of 4 mothers per 10,000 live births in the rural areas in 1927 as compared with 1922. During the same period the mortality rate for urban mothers increased from 73.2 to 74.8. The maternal mortality rates for the 29 States that were in the area in 1922 and remained in the area through 1927 were 65.4 in 1922 and 61.9 in 1927. (Table 7.)

TABLE 7.—*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births), by cause of death, in the United States birth-registration area as of 1922,<sup>1</sup> exclusive of South Carolina; 1922-1927*

Causes of death	1922	1923	1924	1925	1926	1927
All causes.....	65.4	65.7	63.9	64.1	64.8	61.9
Accidents of pregnancy.....	6.5	6.8	6.0	5.8	7.0	5.9
Puerperal hemorrhage.....	6.5	6.6	6.6	6.6	7.0	6.8
Other accidents of labor.....	7.6	7.6	6.6	7.0	7.4	6.9
Puerperal septicemia.....	23.7	25.2	24.2	24.3	23.9	23.9
Puerperal albuminuria and convulsions.....	17.6	16.1	16.8	16.8	16.3	14.9
All other causes.....	3.4	3.6	3.7	3.5	3.2	3.3

<sup>1</sup> Including California, Connecticut, Delaware, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, Virginia, Washington, Wisconsin, Wyoming, and the District of Columbia. These were all the States that were in the birth-registration area every year from 1922 to 1927.

In 18 of the 29 States the maternal mortality rate for the State as a whole was lower in 1927 than in 1922, in 7 States the rate was higher, and in 4 States it was practically the same. In these last two groups, however, 6 of the 11 States had lower rates in the rural areas in 1927 than in 1922.

Comparison of maternal mortality among the groups of white and colored mothers for the birth-registration area shows a slight downward trend in the rates for white mothers. The rates for colored mothers have shown no tendency to decline but were higher in 1927 than they were in 1922. These rates were as follows:

*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births)*

	1922	1927
United States birth-registration area.....	65.4	64.7
White population.....	62.8	59.4
Colored population.....	106.8	113.3

Of the 11 States that were in the birth-registration area in 1922 and 1927 and that had 2,000 or more colored births annually the maternal mortality rate for the colored population was lower in 1927 than in 1922 in 6, higher in 4, and the same in 1. Among the white population the rate was lower in 1927 than in 1922 in 9 of these States and the same in the remaining 2.

The white and colored rates for 1922 and 1927 are not entirely comparable, owing to recent immigration into Northern States of numbers of southern negroes who are not yet adjusted and acclimated. The admission to the birth-registration area of a number of the

Southern States with high mortality rates for colored mothers has also influenced the rate for the area as a whole. It is interesting to note that seven States (Florida, Kentucky, Maryland, New Jersey, Ohio, Virginia, and West Virginia) show reduction in maternal mortality among the colored population. In several of these States attention has been given to the supervision and instruction of colored midwives.

The maternal mortality rate due to puerperal septicemia, the principal cause of maternal deaths, has not decreased. That due to puerperal albuminuria and convulsions, the second most frequent cause of maternal deaths, has decreased from 17.6 per 10,000 live births in 1922 to 14.9 in 1927. There are slight decreases in rates due to accidents of pregnancy and accidents of labor.

The decrease in the maternal mortality rate has therefore been due primarily to a lowering of the mortality rate from puerperal albuminuria and convulsions, a cause affected by prenatal care. That this reduction reflects the effect of the educational work in regard to the importance of prenatal care conducted by the States and of the literature on standards of prenatal care that has been distributed by them seems a justifiable conclusion.

#### LETTERS FROM PARENTS AND PHYSICIANS AND REPORTS FROM FIELD NURSES

The human side of maternity and infancy work and what it means to the individual parents is illustrated by the letters of appreciation that have been received by the State directors and the United States Children's Bureau from interested and grateful fathers and mothers and from appreciative physicians. The reports of maternity and infancy nurses tell of tragedies, adventures, and successful achievement. Excerpts from letters and reports follow:<sup>4</sup>

##### LETTERS FROM MOTHERS TO STATE DIRECTORS

###### From West Virginia:

Just a word of appreciation and thanks for your letters, brimful of suggestions, aid, encouragement, and cheer. Each and every one I have read and reread carefully, and I am striving to the best of my ability to follow your good advice which has helped me thus far, and trust that you, the department, and our State will be slightly repaid when my baby's birth certificate has been returned, and through the subsequent years of our lives.<sup>5</sup>

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The mother's training course should be continued by all means. It is a great work; it is especially helpful to farm women. There are many who do not pay attention, but it is a great benefit to those that do. I could not get along without your helpful pamphlets and bulletins. The county nurses should be more in number and more home-nursing courses should be organized.<sup>6</sup>

###### From Michigan:

I appreciate greatly the material sent to me from the State department of health and attribute, in part, a healthy term of pregnancy and a lovely baby girl to its helpful suggestions. The contents of the monthly letters and bulletins is put in such a reassuring manner that it takes away the dread of the

<sup>4</sup> A few of these letters were received after the close of the fiscal year 1928.

<sup>5</sup> This was from a woman who was enrolled in the correspondence school for mothers. Her baby had just arrived.

<sup>6</sup> This letter was forwarded by a nurse to the State supervising nurse.

coming of the first baby, which is such a mystery. Before my marriage I taught in the ——— junior high school of this city, in the home-economics department. We organized the little mothers' league in the ninth grade for three semesters and followed the lessons as outlined by the State department of health. Looking back, I feel that the work has been a wonderful aid to me in caring for my baby. If the girls received as much benefit from their work as I have the result will be far-reaching in the bettering of the care of infants. I wish that the importance of this work in the home could be more fully realized in instructing our school girls. The effort put forth by your department is indeed splendid. My physician recommends highly your material on prenatal and infant care and has it sent to quite a number of his patients. I think him wise in doing this, for expectant mothers have such terrifying things told to them that they need something authentic on the subject at hand to keep a healthy mind.

Baby ——— is 8 weeks old and gaining steadily. She has not had a sick moment since her arrival, for which we are so thankful.

#### **From New York:**

I wish to thank you for the baby book you sent me last year. Now I have a friend who has used this about half the time but lives in ———, 15 miles from here, and it makes it very inconvenient for her and myself also. Will you please send her one, or me another one? Her name is Mrs. S.

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When people stop me on the street and ask me the whys and wherefores of my so obviously healthy baby I always say "He's a Government baby," giving all credit to your bulletin (Infant Care). I was lucky enough not to know anything about babies before and not to have any relatives who thought they did.

#### **From Pennsylvania:**

Will you kindly send to the address below your booklet on Infant Care? My baby is 19 months old, and I have found the advice therein invaluable.

#### **From Oregon:**

Words can not express what a great help the little booklet called Infant Care has been in our home. We have had wonderful results with our baby by following the booklet.

#### **From Missouri:**

I am writing you in regard to the two books which I have received from your offices. I have in my possession one entitled "Prenatal Care" and another "Infant Care." These books are so precious to me that I can not part with either of them, so am taking this opportunity to ask you a favor. Would it be possible for your office to send a friend of mine either of these books or both, as they would certainly be a help to her from both points of view? \* \* \* She wanted to borrow them, but they are almost as close to me as my Bible.

### **LETTERS FROM PHYSICIANS TO STATE DIRECTORS**

#### **From Pennsylvania:**

A few months ago you were kind enough to send me a supply of bureau publications 4 and 8 [Prenatal Care and Infant Care]. I wonder if I could prevail upon you to send me a whole lot of them. They turned out to be the most wonderful help to my primipara cases that I have had in my 23 years of practice. They have become famous in this part of the country, and I am having to borrow them back to lend again and again as there are not enough to give each case a new one.

#### **From Ohio:**

It has been my custom to give every confinement patient a copy of this book (Prenatal Care) and at the time the baby is born the book on Infant Care. I use 400 or 500 of these a year.

#### **From Illinois:**

Please send me 12 copies of booklet Infant Care, bureau publication No. 8 (revised). This is one of the best booklets I have read on this subject, and I am desirous of securing these copies for some of my patients.

**From Michigan:**

On behalf of the ——— County Medical Society we wish to thank you for your notable assistance in the conduct of the recent children's clinic. Without your direction in daily conduct of the clinic it would have been impossible to hold it.

Sincerely yours,

—————, M. D.,  
Secretary, ——— County Medical Society.

**LETTER AND ORAL REPORT FROM FATHERS****From California:**

As I have recently become a dad to a wonderful baby girl, I am wondering if you would be so kind as to send me your booklets, Baby Care, Child Management, and Child Care.

My brother has received his copies, and upon looking over them I discovered something contained in it that applied to my baby (difficulties of the nursing period). We decided before reading the booklet that we would immediately put it on a bottle, not taking into consideration that the baby is but 3 weeks old, now we can readily understand why she raises a rumpus frequently. So personally I think the booklet is worth its weight in gold.

**From Kansas:**

A father brought his baby of approximately 1 year of age to one of the conferences. The child was examined and found to be in perfect condition. Since it is rather unusual for a father alone to bring a little baby to a conference the physician in charge conversed with him with a view to getting some light on the case. The young father said that the infant's mother had died at birth and he had immediately taken charge of his child; had read all the literature he could procure on the care and feeding of infants. He bathes and dresses the baby in the morning before leaving it in the care of his mother for the day. He takes entire charge of it during his unemployed hours and at night—it had not been separated from him a single night since its birth.

**REPORTS FROM NURSES IN THE FIELD****From Oregon:**

A county nurse begins her report with the statement that the outstanding accomplishment in one county has been the establishment on a permanent locally supported basis of monthly child-health conferences in two small towns. "These," she says, "are conducted in B—— by the local doctors and in R—— by one doctor until his departure and then by another. In B—— all clinic appointments are made in advance through the B—— Chamber of Commerce. In R—— the county agent's office arranges appointments. Some of the outside doctors who have conducted clinics for us are [naming four]. An interesting feature of the 3-day clinic during the D—— County fair conducted by Doctor H. was the fact that it was financed by the R—— and B—— Chambers of Commerce, the D—— County court, and the public-health association. The clinic at the tri-county State picnic conducted by Doctor B. was financed by the county granges."

Another nurse says: "The two outstanding events in child-welfare work in U—— County were the summer round-up clinics sponsored by the parent-teacher association and the infant and preschool

clinics held in seven towns, at which 379 infants and preschool children were examined."

The report from another county where the work had been reorganized reads: "Owing to the high infant mortality rate in this county a series of infant and preschool clinics was the first plan made by the nurse for her summer program. With the assistance of a clinician and the field supervisor from the State board of health, clinics were held in five towns. They were well attended and much appreciated by parents."

#### From Virginia:

We started back to ——— about 3 p. m., and about 3 miles from ——— received a maternity call.<sup>7</sup> To reach the place we had to walk 1 mile straight up the mountain through a creek bed, there being no road. Fortunately, there were rocks enough to protect our feet from the water. Reaching the home, we were invited into the patient's room in which there were 13 women, 3 babies, and husband in attendance. We found the woman in a critical condition. After an examination was made and a few orders given doctor and I returned to ——— to get a few things needed—ether, chloroform, and so forth. We had a cheese sandwich and a cup of coffee, returning to the patient as soon as possible to find the same number in attendance. The doctor and I had a strenuous night, and at 2 a. m., finding it was impossible to accomplish results in the home, decided the patient would have to be taken to the hospital. The doctor asked me to stay with the patient and go with her to the hospital the next morning, while he would go home and make arrangements to get a motor car or an engine, and get a few hours' rest in the meantime.

We improvised a stretcher with green poles and quilts, making the patient comfortable on them with hot-water bottles, and so forth. We started with four to "pack" her to the main road where a motor car was provided to take us over the mountain. Before the men had gone very far their burden became too heavy, and the sister and I had to relieve two of the men; they in turn relieved the other two. On the way to the road we passed the home where her two children were staying. They were screaming, "Please let me see my mother," but fearing overexcitement to the mother we begged them to be quiet, telling them that their mother would be all right. We reached the road and found doctor waiting in his car. He insisted on my going over in the car with him rather than in the motor car with the patient, as it was so very cold, but I could not think of the poor soul going over that mountain alone with no other but men to look after her, so I went with her, for which she was so grateful. We reached ——— at 10 a. m., and the patient was taken at once to the operating room, but in spite of all efforts she died that evening.

It became my duty to break the news to the husband, and I don't know what the poor soul would have done had I not been with him. He had only money enough to pay his board at the clubhouse and to buy one ticket home. I went with him to the company's store, arranged for the casket, and the store manager gave the material for the shroud to the local Red Cross committee, and one of the ladies made the shroud that night. The husband came to me the next morning with tears in his eyes and said, "Miss M., I haven't the money with me to pay for the body to be taken home." I told him not to bother, that I was attending to that, but before I could get to the office the store manager had already attended to it. The people of ——— certainly came to the rescue in time of need and did everything they could to help me and this poor man. The body was not taken home, as it was too far to "pack" the casket up the mountain, but was taken to the home of a friend in ———. I left orders with the husband that the casket should not be opened until I could get there, as we had no undertaker, and later in the day I attended to this matter.

The day of the funeral I was called upon to do the only thing left in that line which I had not done—conduct the funeral services. This done, I turned my attention to the welfare of the husband and children.

<sup>7</sup> Though the maternity and infancy nurse does not as a rule give bedside care, she is sometimes called upon to assist the rural physician in an emergency.

In visiting on one of our back river roads about 10 miles from ——— I met a woman in the road, and, as I usually do, I stopped and asked her if she knew of any young children under 2 years or any young women who were expecting to become mothers. I told her I was from the State board of health, and she said, "Then you go to see Mrs. J.'s baby, for she is a girl that is in love with the State board of health. She took a correspondence course before her baby came and knew just how to do everything for her baby when he arrived." I called and found Mrs. J. an ideal young mother; the baby is fine, is 5 months old, and weighs 15 pounds, is breast fed, and in perfect health.

#### From Texas:

Last month I attended a maternity case which proved to be the fortieth grandchild of one of the oldest pioneers of this county. The old lady is over 90 years old but is quite sprightly for her age, which she proved by visiting the little newcomer. Like all old people, she lives in the past, but showed that she had an eye for new things also. She approved of the sunshine flooding her granddaughter's room and dwelt for some time on the fact that she had to spend her time after her confinement in a dark room so that the baby would not get sore eyes. She thought it wonderful that the doctors had found out that bright light would not bring on any sore eyes.

I have found the champion infant feeder in my county. I had a child-health conference in ———, a small rural community, and 22 children attended. A father brought an 11 month-old boy to the conference. The baby is a picture of health and was perfect. I asked the father about the baby's care. He said his wife died soon after the baby came and he had been caring for the baby. He told me how he sterilized the bottles and prepared the food. He also brought his two small daughters to be inspected. The children were all well cared for. \* \* \* The mothers said it was a slam on them because he did a better job than they did. He hired a man to do his farm work so he could care for his children.

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The small clinics were held in a home, hall, school, whichever seemed to be most centrally located and convenient. The hours were from 1 to 5. The doctors were asked to come at 2. At that time we had finished the preliminary work and the children were ready to be examined. When they practically all arrived at one time I found it exceedingly hard to keep them from crowding into the doctor's office at one time, although I numbered their cards. I found it necessary to have a doorkeeper to keep them out. It is much better to have one child with his parents in with the doctor at one time, especially since we stripped them to the waist. Another difficulty was in teaching the lay helpers how to fill out blanks correctly. Some of them never had done any health work before, and it made it very hard. I wished that I could do it all by myself, but that was impossible. I am hoping to have the same ones back in the fall, and then it will be much easier. \* \* \* I feel most grateful for the hearty cooperation of both the medical and dental professions. Without an exception they all said: "This is a most important work and should be carried on everywhere." If only the parents will do what is advised and not put it off. I tried to impress the follow-up committee with the importance of securing corrections first for the benefit of the child, second for the good of the school, to prevent so many repeaters, as an example to other parents, and for the furthering of public health in that and surrounding communities. Even our future round-ups depend on the outcome of this one. We want to prove to the doctors and dentists that it is not time wasted.

#### From South Carolina:

We are much indebted to Doctor M., of ———, whose generous cooperation was one of the big factors in our success. He attended all deliveries and took time to explain details to the class when he thought such explanation could be understood. In this way he gave them a great deal of very valuable instruction.



At one of my recent infant and preschool conferences there were several mothers who had been visited and getting the advisory letters and had been under the doctor's care for the nine months of pregnancy. The babies of these mothers scored 100 per cent. One mother remarked, "I attribute all this to being under the doctor's and nurse's care before my baby arrived."

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One of my Mexican mothers has had twins. She is 26 years old and this makes eight children. She says she has had much benefit from the prenatal letters she is getting in Spanish. She has tried to observe the directions regarding diet and rest, and her preparations for her confinement showed that she had really understood the letters, and the twins are fine children.

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One white midwife is so anxious to keep up with the classes that she is now attending the colored midwife class. We had four visitors this month at our colored midwife class. We had four visitors this month at our regular class meeting.

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## PRINCIPAL ACTIVITIES OF THE INDIVIDUAL STATES DURING 1928

A summary of the work done in the individual States as reported to the Federal office in their annual reports covering the fiscal year 1928 is given in the following pages. The figures in regard to certain of the main activities have been summarized in Tables 2, 3, 4, and 5.

The outline of activities for each State is preceded by statements in regard to the administrative agency, funds expended, and staff of the agency during the year under review. The sums of money reported expended are not the same as the amounts accepted from each appropriation during the two years it is available. They are instead the actual expenditures during the fiscal year ended June 30, 1928, including any unexpended balances carried over from the previous year.<sup>1</sup>

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<sup>1</sup> See footnote 4, Table 1, p. 3.

## ALABAMA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, bureau of child hygiene and public-health nursing, Montgomery.

Funds expended: Federal, \$25,836.95; State, \$20,836.95; total, \$46,673.90.

#### Staff:

Director (nurse), 2 nurses, 2 vital-statistics clerks, 1 bookkeeper (part time), 1 stenographer. Thirty-two county nurses were paid in part from maternity and infancy funds.

#### Activities:

Child-health conferences conducted by physicians—1,856; infants and preschool children registered and examined—11,601; visits to conferences—14,919.

Defects found in children examined at conferences—1,471; children having defects—1,248 (report incomplete). Parents had defects corrected in 664 of the children.

Prenatal conferences conducted by physicians—346; expectant mothers registered and examined—2,113; visits to conferences—4,092.

Conferences conducted by nurses, no physician present—387; children inspected—393; mothers instructed in prenatal care—1,251; visits to conferences by children—630.

New permanent combined prenatal and child-health centers—11 established by county health units. They are supported by county, State, and maternity and infancy funds, also by the Rockefeller Foundation.

Classes for girls in care of infants and preschool children—101 organized; girls enrolled—1,514; number completing course—53 (report incomplete).

Midwives under supervision—937, in the counties having county health departments (many of which had nurses paid in part from maternity and infancy funds). In a number of the counties monthly conferences for midwives were held at the office of the county health department or at designated points in the county. These were supplemented by personal interviews at the office or in the midwives' homes. Courses of 12 lessons were given to some midwives. Permits to practice midwifery are granted for the current year only.

Home visits by nurses—50,081 (prenatal cases seen, 5,409; obstetrical cases, 33; postnatal cases, 5,258; infants, 8,697; preschool children, 3,717).

Survey—1, of maternal mortality, in cooperation with the United States Children's Bureau and with the indorsement of the State medical society, the cost of the work being paid in part by the State and in part by the United States Children's Bureau.

Talks and lectures—1,601.

Literature distributed—many pamphlets on maternal and child care (no record kept of number of pieces).

Breast feeding was stressed by the county nurses in talks given to groups and in the instruction given in visits to homes.

Infants born in the State during the year—65,385; infants and preschool children reached—by home visits, 12,414; by conferences, 11,601; expectant mothers reached—7,063.

Counties in the State—67; counties in which maternity and infancy work was done during the year—32; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—33.

The following organizations cooperated in the bureau's work: Alabama Polytechnic Institute (extension service), State board of education, State child-welfare department, committee on maternal welfare of the State medical association, and the parent-teacher association.

Among the outstanding features of the year's work were the extension of maternity and infancy work in 11 counties through the organization of county health departments, cooperation in the establishment of a training station for nurses, health officers, and sanitary inspectors, and the beginning of the study of maternal mortality in cooperation with the United States Children's Bureau.

#### TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene and public-health nursing was established in the State board of health in 1920. The State accepted the provisions of the maternity and infancy act through the governor's acceptance on January 4, 1922. This was followed by legislative acceptance approved by the governor on February 14, 1923.

A public-health nurse has directed the work, assisted in the later years by supervising field nurses. An increasing number of public-health nurses in county health departments (32 in the year under review) have been paid from maternity and infancy funds for maternity and infancy work.

Cooperation has been established with other branches of the State government (the board of education and the child-welfare department), the Alabama Polytechnic Institute, State and county medical societies, and the parent-teacher association.

Much of the maternity and infancy work has been conducted through the county health departments. The county health officers, assisted by the public-health nurses, examined and advised expectant mothers and examined infants and preschool children in health conferences. The sanitary inspectors connected with county health departments also contributed services. Visits to homes of mothers and children by the county nurses have been a marked feature of the program. County health departments have supervised and regulated the midwives within the confines of their counties.

The campaign for promotion of birth registration conducted in the fiscal year 1927, to which assistance was given by State maternity and infancy workers, terminated in the State's admission to the United States birth-registration area in July, 1927.

An active interest in the welfare of mothers and babies is indicated by the study of maternal mortality being made in the State, the expansion of the maternity and infancy program through the addition of new county health departments, and the improvement that has been brought about in the work of the midwives.

As the State did not enter the birth-registration area until 1927, figures for infant and maternal mortality rates are available from the United States Bureau of the Census for that year only, as follows:

#### *Infant mortality rates (deaths of infants under 1 year of age per 1,000 live births), 1927*

State.....	64
White.....	55
Colored.....	82
Urban.....	77
Rural.....	62

#### *Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births), 1927*

State.....	79.6
White.....	62.5
Colored.....	111.6
Urban.....	110.2
Rural.....	73.2

## ARIZONA

### STAFF AND ACTIVITIES IN 1923

#### Administrative agency:

State board of health, child-hygiene division, Phoenix.

Funds expended: Federal, \$7,711.66; State, \$7,253.71; total, \$14,965.37.

#### Staff:

Director, 5 nurses (2 part year). Stenographic assistants were employed as funds permitted.

Volunteer assistants—4 physicians.

#### Activities:

Child-health conferences conducted by physicians—56; infants and preschool children registered and examined—905; visits to conferences—1,083.

Conferences conducted by nurses, no physician present—42; children inspected—410; mothers instructed in prenatal care—28; visits to conferences by children—684; visits by mothers—41.

Defects found in children examined at conferences—1,037; children having defects—537. Parents had defects corrected in 409 of the children. (This figure includes defects corrected in children inspected at conferences conducted by nurses only as well as in children examined by physicians.)

Dental conference—1; preschool children receiving dental examination—37. Classes for girls in care of infants and preschool children—4 organized; girls enrolled—74; number completing course—32; lessons in course—4 to 10.

Classes for mothers—17 organized; mothers enrolled and completing course—407. The number of lessons in the courses varied.

Home visits by nurses—9,041 (prenatal cases seen, 348; obstetrical cases, 15; postnatal cases, 203; infants, 820; preschool children, 787).

Community demonstrations—31, of a maternity and infancy public health nursing program. The work included health conferences, home visits, class instruction, lectures, and group demonstrations.

Group demonstrations—178, on preparation and sterilization of obstetrical supplies, preparation of bed for confinement, bathing patient in bed, bathing and dressing the baby, giving sun baths, preparing formulas, bandages, and dressings, caring for bottles, and caring for eyes, ears, and nose of child.

Talks and lectures—86.

Literature distributed—64,435 pieces.

New names registered for prenatal letters—600; prenatal letters distributed—460 sets.

Nutrition work was done through classes and individual instruction given at conferences and in home visits.

Exhibit material was lent three times.

Breast feeding was stressed in class instruction, in literature distributed, and in visits made in homes.

Infants born in the State during the year—8,436; infants under 1 year of age reached by the work of the division—8,611; preschool children reached—1,772; expectant mothers reached—976.

The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics (except in case of tourists or families of migratory laborers).

Counties in the State—14; counties in which maternity and infancy work was done during the year—7; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—14.

The following organizations cooperated in the division's work: Women's clubs, church relief societies, and the parent-teacher association.

As a result of the division's work in one community specialists held three clinics for the correction of defects of children, with the indorsement of the local physicians.

## TYPES OF WORK AND SOME RESULTS

The child-hygiene division was established in the State board of health in 1919. The State accepted the provisions of the maternity and infancy act through the governor's acceptance on December 23, 1921. This was followed by legislative acceptance approved by the governor on March 13, 1923.

The same director has been in charge of the work of the division during the period of cooperation with the Federal Government. Three to five staff nurses have been assigned to field work in the past few years.

The division has had cooperation from women's organizations, the parent-teacher association, and church relief societies, and assistance from lay and professional volunteer workers.

Expansion of activities in the maternity and infancy work, particularly in the activities conducted by the nurses, has marked the program. Home visits made by nurses were more than doubled in 1928, when 9,041 visits were made, as compared with 1927, when 4,250 visits were made. In 1927 the number of new names of expectant mothers registered for prenatal letters was 159; during 1928 the number increased to 600.

One goal in the division's work was bringing the State into the United States birth and death registration areas. This was accomplished in 1926. A result of entrance into the registration area has been the possibility of reaching with literature on infant care all parents whose babies' births are registered in the State department of health.

State figures show a downward trend in infant mortality rates since 1920, although the rate announced by the United States Bureau of the Census was higher in 1927 (130 per 1,000 live births) than in 1926, the first year for which Census Bureau figures were available (121). A large and constantly changing group of foreign laborers within the State has created a difficult health problem. This situation is no doubt one of the factors giving to the State a higher infant mortality rate than that of any other State in the registration area, and it accounts for some fluctuation in rates.

The number of maternal deaths declined in 1927 as compared with 1926. The maternal mortality rate for 1926 was 102.5 per 10,000 live births; the rate for 1927 was 89.

## ARKANSAS

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, bureau of child hygiene, Little Rock.

Funds expended: Federal, \$14,634.68; State, \$13,244.79; total, \$27,879.47.

#### Staff:

Director (State health officer serving), 2 nurses (1 for 9 months), 1 lecturer and field worker, 1 stenographer. Twenty-six county nurses were paid in part from maternity and infancy funds.

#### Activities:

Child-health conferences conducted by physicians—434; infants and preschool children registered and examined—3,777.

Defects found in children examined at conferences—6,394; children having defects—3,508. Parents had defects corrected in 3,352 of the children.

Prenatal conferences conducted by physicians—87; expectant mothers registered—602; number examined—112.

Conferences conducted by nurses, no physician present—249; children inspected—7,280; mothers instructed in prenatal care—108; visits to conferences by mothers—470.

Dental conferences—10, conducted by dentists who volunteered their services; preschool children receiving dental examination—411.

New permanent combined prenatal and child-health centers—16 established as a result of the maternity and infancy work. They are supported by maternity and infancy, county, and private funds.

Classes for girls in care of infants and preschool children—76 organized; girls enrolled—385; lessons in course—24.

Classes for mothers—108 organized; mothers enrolled—372.

Classes for midwives—314 organized; midwives enrolled plus those carried over from previous year—2,613. The regular course of instruction includes 6 topics which may be divided into 2 or more lessons. The course is enlarged as the midwives show capability for more advanced instruction.

Home visits by nurses—6,081 (to prenatal cases, 551; obstetrical cases, 28; postnatal cases, 774; infants, 2,600; preschool children, 2,128).

Demonstrations—26, consisting of parades, pageants, and plays emphasizing some phase of the child-health program.

Group demonstrations—457, of maternity outfits, preparation of food for children, and nursing care of mothers and children in the home.

Surveys—2: (1) Of midwives. (2) Of birth registration. Both were statewide.

Campaign—1, for the examination of preschool children and correction of their defects. About one-third of the counties were thoroughly organized for this campaign, and practically all of them carried on some work, much of which was done by local organizations. Many physical examinations, corrections of defects, immunizations against diphtheria, inoculations against typhoid fever, and vaccinations against smallpox resulted.

Talks and lectures—863.

Literature distributed—131,273 pieces.

Nutrition work was done through individual instruction to mothers of preschool children.

Exhibits conducted—344. Exhibit material prepared—posters, model bed for demonstration purposes at health conferences, dental exhibit. Exhibit material was lent twenty-five times.

Breast feeding was stressed in instruction given to expectant mothers and to midwives.

Infants born in the State during the year—41,772; infants under 1 year of age reached by the work of the division—4,727 (exclusive of those reached by literature distributed); preschool children reached—5,300 (exclusive of those reached by literature distributed); expectant mothers reached—1,196.

## Activities—Continued.

Counties in the State—75; counties in which maternity and infancy work was done during the year—62; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—75.

Since the beginning of the State's cooperation under the maternity and infancy act 2 counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

The following organizations cooperated in the bureau's work: State board of education (home-economics section), State university (extension service), State federation of women's clubs, State society for crippled children, State fair association, women's auxiliary of the State medical society, American Legion, American Legion auxiliary, Woman's Christian Temperance Union, and the parent-teacher association. They assisted with surveys, health conferences, classes for girls, establishment of health centers and clinics of various kinds, and provided means for the correction of defects of many children.

Among the outstanding features of the year's work was the extension of the maternity and infancy program in 20 new county health departments.

## TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene was established in the State board of health in 1919. The State accepted the provisions of the maternity and infancy act through the governor's acceptance on January 20, 1922. This was followed by legislative acceptance approved by the governor on February 9, 1923.

A physician usually has directed the maternity and infancy work. During several years the State health officer has been the acting director.

In the earlier years of cooperation under the act a general program of education was conducted by means of itinerant child-health conferences, distribution of literature, work with midwives, and an active campaign for better registration of births.

Since the Mississippi flood in the spring of 1927 the State health department has been developing many full-time county health departments, with a view to rehabilitation and improved sanitation. Work with the child-health truck paved the way for establishing these health departments. A full-time medical director, one or two county nurses, a sanitary inspector, and sometimes a stenographer comprise the usual county health department personnel. Many nurses as well as health officers are sent to the training station at Indianola, Miss., for a month's intensive training before being assigned to county health departments. Much of the maternal and infant-hygiene program was conducted through the activities of nurses paid in part from maternity and infancy funds, who were assigned to county health departments for maternity and infancy work. During the year under review the 26 nurses thus employed and detailed to county health departments represented an increase of 15 over the preceding year; fewer workers were employed on the State staff in 1928.

Immunizations of children against diphtheria, smallpox, and typhoid fever, conducted largely by county health departments, were among the activities in the State during the year under review.

Cooperation has been maintained with other branches of the State government (the bureau of education and the State university), and with women's organizations, the parent-teacher association, the American Legion and its auxiliary, the State fair association, and the State society for crippled children. Physicians, dentists, and lay persons also have given volunteer services.

An outstanding result of the work has been the inclusion of Arkansas in the United States birth and death registration areas in 1927, after an active educational campaign in which the bureau of child hygiene assisted.

The midwives are kept under supervision, and improvement in their standards of practice has been noted. They now assist their patients in securing prenatal care and in having urinalyses made.

As the State was not admitted to the registration area until early in 1927 figures from the United States Bureau of the Census for computation of mortality rates are available only for that year. The infant mortality rate in 1927 was 61 per 1,000 live births for the State as a whole, 82 in urban areas, and 59 in rural areas. The maternal mortality rate in 1927 was 89.7 per 10,000 live births in the State as a whole, 134.5 in the urban areas, and 85.9 in rural areas.



## CALIFORNIA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of public health, bureau of child hygiene, San Francisco.  
Funds expended: Federal, \$29,707.89; State, \$21,600.34; total, \$51,308.23.

#### Staff:

Director (physician), 3 physicians (2 part year, 1 of these part time), 1 nurse, 2 maternity-home inspectors, 1 vital-statistics clerk (part year), 1 financial clerk (part time), 1 mailing clerk, 2 stenographers (1 part year, 1 part time). Twenty-nine county nurses in 19 counties were paid wholly or in part from maternity and infancy funds.

Volunteer assistants—60 physicians, 9 dentists, 29 nurses, 290 lay persons.

#### Activities:

Child-health conferences conducted by physicians—583; infants and preschool children registered and examined—7,779; visits to conferences—10,984.

Prenatal conferences conducted by physicians—102; expectant mothers registered and examined—706; visits to conferences—1,347.

Conferences conducted by nurses, no physician present—712; children inspected—1,294.

Dental conferences—53; preschool children receiving dental examination—1,240.

New permanent child-health centers—17 established as a result of the maternity and infancy work. They are supported by city or county and maternity and infancy funds. Women's clubs cooperate.

Classes for girls in care of infants and preschool children—49 organized; girls enrolled and completing course—321; lessons in course—16.

Classes for mothers—81 organized; mothers enrolled—2,030; number completing course—1,650; lessons in course—5 to 8.

Home visits by nurses—20,844 (prenatal cases seen, 557; obstetrical cases, 27; postnatal cases, 381; infants, 3,391; preschool children, 5,407).

Maternity homes and hospitals inspected—352; inspections made—651.

Group demonstrations—601, on home nursing, preparation of food, and various other phases of maternal and infant care.

Surveys—3: (1) Of county hospitals. (2) Of birth registration. (3) Of maternal mortality. All were state-wide.

Campaigns—4: (1) For state-wide examination of preschool children and correction of their defects before the children should enter school. (2)

For prevention of diphtheria, in 5 counties. (3) For prevention of smallpox, in 4 counties. (4) For prevention of typhoid fever, in 1 county.

Talks and lectures—102, to audiences totaling more than 9,000 persons.

Literature prepared—Physical Standards for Children, set of postnatal letters.

Literature distributed—92,108 pieces.

New names registered for prenatal letters—1,492; prenatal letters distributed—3,107 sets.

A 1-day institute for nurses on maternity and infancy work and obstetrical nursing was conducted by a prominent obstetrician, and assistance was given in organizing two institutes of public-health nursing at the University of California. A 1-day institute for physicians on prenatal care and the organization and aims of prenatal clinics was conducted by the same obstetrician.

Nutrition work was done through 20 nutrition classes attended by 231 persons, also by individual instruction at classes of other types, and at health conferences.

## Activities—Continued.

Exhibits conducted—29, at State and local meetings. Exhibit material prepared—prenatal and infant train in which the stations along the road begin with Prenatal Care and Birth Station, followed by episodes in the first year of life, as Orange Juice, and Sun Baths, with small dolls used for illustration. Exhibit material was lent twenty-three times.

Articles prepared—Value of Health Education, "Escuelita."

Breast feeding was stressed through literature distributed, individual instruction given to mothers, and demonstrations made at nurses' institutes and classes for mothers.

Infants born in the State during the calendar year 1927—84,334; infants under 1 year of age reached by the work of the bureau during the year under review (exclusive of those reached by literature distributed)—8,551; preschool children reached (exclusive of those reached by literature distributed)—10,561; expectant mothers reached—4,370.

Counties in the State—58; counties in which maternity and infancy work was done during the year—56; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—58.

Since the beginning of the State's cooperation under the maternity and infancy act 12 counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

The following organizations cooperated in the bureau's work: State tuberculosis society, State league of women voters, American Association of University Women, American Red Cross, federated women's clubs, men's service clubs, and the parent-teacher association. They assisted in campaigns and cooperated with the county nurses who were paid in part from maternity and infancy funds. Among the children examined at conferences reported in the foregoing paragraphs many were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

Among the outstanding features of the year's work were the pediatric service given by the staff physicians, the better organization of the maternity and infancy nursing service, and the fact that the campaign work to have preschool children examined before entering school has been assumed by the parent-teacher association.

## TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene was established in the State department of public health in 1919. The State accepted the provisions of the maternity and infancy act through the governor's acceptance on April 3, 1922. This was followed by legislative acceptance approved by the governor on April 30, 1923.

A medical director, assisted by a relatively small central staff and an increasing staff of field nurses, has been in charge of the work. One of the chief features of the program has been the expansion of public-health nursing in the State. One feature of this expansion has been the assumption of financial responsibility for maternity and infancy work by 12 counties. During the year under review 29 county nurses, as compared with 20 in 1925, were paid wholly or in part from maternity and infancy funds. Only 9 of the 58 counties in the State were without some form of public health nursing service at the close of the fiscal year 1928.

A noteworthy feature of the State program has been the effort to examine the preschool children of the State before they enter school. During 1928 examinations were conducted in 49 counties, an increase over former years.

The inspection and supervision of maternity homes and hospitals, which is a duty of the State bureau of child hygiene, has been greatly extended, the number of inspections having increased from 271 in 1926 to 522 in 1927 and 651 in 1928. The effect of this work seems to have been reflected in lower maternal mortality rates.

The free distribution of nitrate of silver for the prevention of ophthalmia neonatorum was begun in the State in 1915. Maternity and infancy funds have been contributed since 1927. The distribution has been chiefly to midwives and to small maternity homes. The 38 cases of ophthalmia neonatorum reported in 1924 were the highest number reported for any one year during the period 1915 to 1927, inclusive. The 13 cases reported in 1927 were the lowest number of cases reported for any one year in this period.

Cooperation has been given by prominent State organizations of women, the American Red Cross, the State tuberculosis society, and men's service clubs. The parent-teacher association has assumed responsibility for the drive for examinations of the preschool child.

Infant mortality has declined from 71 babies dying in the first year of life for every 1,000 born alive in 1922, when the State began cooperating under the maternity and infancy act, to 62 in 1927, a saving of 9 babies in every 1,000 in 1927 as compared with 1922.

The maternal mortality rate has declined during the period of cooperation from 71.9 per 10,000 live births in 1922 to 57.6 in 1927, a saving of 14 mothers' lives for every 10,000 live births. The rural rate was 64.9 in 1922 and 52.2 in 1927; the urban rate was 77.1 in 1922 and 61.3 in 1927.

## COLORADO

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of public instruction, child-welfare bureau, Denver.  
Funds expended: Federal, \$10,000; State, \$5,000; total, \$15,000.

#### Staff:

Director, 3 physicians (part time, 1 two months), 3 nurses (2 part year), 1 clerk, 1 stenographer. An additional physician and additional nurses were employed as needed.

Volunteer assistants giving occasional help—48 physicians, 23 dentists, 20 nurses, 600 lay persons.

#### Activities:

Child-health conferences conducted—41, in 30 towns; infants and preschool children registered and examined—1,401.

The organization work for the conferences was done by the University of Colorado through its department of organization. The staff of the conference unit consisted of the director of the bureau, a pediatrician, a nurse, and a clerk, also representatives of the State board of health, the State tuberculosis association, the State dental association, and the psychopathic hospital of the State university.

Defects found in children examined at conferences—4,527; children having defects—1,255. Parents had defects corrected in 594 of the children.

Prenatal conferences conducted by physicians—16; expectant mothers registered and examined—162.

Conferences conducted by nurses, no physician present—42; children inspected—771.

New permanent prenatal center—1 established as a result of the maternity and infancy work. It is supported by a city health department but uses records and literature furnished by the State child-welfare bureau.

Classes for girls in care of infants and preschool children—33 organized; girls enrolled—175; number completing course—162; lessons in course—12.

Classes for mothers—14 organized; mothers enrolled plus those carried over from previous year—86; number completing course—62; lessons in course—10.

Home visits by nurses—961 (prenatal cases seen, 65; obstetrical case, 1; infants, 279; preschool children, 616).

Community demonstrations—4, of maternity and infancy public-health nursing. All were county-wide.

Group demonstrations—6, on various phases of maternal and infant care.

Surveys—2: (1) Of public health nursing service in the State. (2) Dental, in 1 town.

Campaigns—2: (1) For promotion of birth registration.<sup>2</sup> (2) For the examination of preschool children and correction of their defects before the children should enter school. Both were state-wide.

Talks and lectures—127.

Literature prepared—record cards, leaflet on enuresis.

Literature distributed—10,600 pieces.

The State agricultural college conducted nutrition classes following the child-health conferences of the child-welfare division, using the reports and record cards of the children examined as a basis in selecting children for the classes.

Exhibits conducted—7, at State and county fairs and at various meetings.

Exhibit material prepared—posters showing literature on maternal and infant care available from the bureau. Exhibit material was lent five times.

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<sup>2</sup> Colorado was admitted to the United States birth-registration area in August, 1928.

**Activities—Continued.**

Breast feeding was stressed in the instruction given to mothers at conferences and in the literature sent to mothers of infants whose births were reported in the newspapers.

Infants under 1 year of age reached by the work of the bureau during the year ended June 30, 1928—4,031; preschool children reached—3,970; expectant mothers reached—3,000.

The bureau sends literature on infant hygiene to parents of all infants whose births are reported in the newspapers.

Counties in the State—63; counties in which maternity and infancy work was done during the year—29; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—58.

Since the beginning of the State's cooperation under the maternity and infancy act one county has assumed the responsibility for maternity and infancy work.

As a result of the bureau's work child-health conferences were conducted by local personnel in several towns, and two prenatal clinics were organized.

The following organizations cooperated in the bureau's work: State board of health, State university and its psychopathic hospital, State agricultural college, State dental association, State tuberculosis association, and the parent-teacher association. They assisted by detailing personnel to the child-health conferences and by conducting nutrition classes.

Among the outstanding features of the year's work was the assistance given to the State bureau of vital statistics in a birth-registration campaign conducted to qualify the State for admission to the United States birth-registration area.

**TYPES OF WORK AND SOME RESULTS**

The child-welfare bureau, in which the administration of the maternity and infancy act is vested, was established in the State department of public instruction in 1918.

The State accepted the provisions of the maternity and infancy act through the governor's acceptance on January 9, 1922. This was followed by legislative acceptance approved by the governor on April 30, 1923.

The same director, assisted by nurses, has had charge of the work during the period of cooperation under the act.

Itinerant child-health conferences conducted by physicians have been an important feature of the program, through which information given by skilled professional men has reached many remote sections of the State.

Cooperation has been maintained with the State board of health and State educational institutions, the State medical society and the dental and tuberculosis associations, the American Red Cross, women's organizations, and the parent-teacher association.

Many demonstrations have been conducted at fairs and other assemblies.

The distribution of literature to parents of all infants whose births are reported in the newspapers has been a feature of the work for the last two years.

During approximately two years the child-welfare bureau has cooperated with the vital-statistics bureau of the State department of health in efforts to bring the State into the United States birth-registration area. A campaign of education in regard to registration was conducted by staff nurses and other workers on the bureau's staff. Educational work was done through fairs, and registration of many births was secured. The campaign continued until the close of the year under review.

As the State was not in the birth-registration area during the year under review, no statement as to mortality rates can be made.

## DELAWARE

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, division of child hygiene, Dover.

Funds expended: Federal, \$12,909.73; State, \$8,188.20; total, \$21,097.93.

#### Staff:

Director (physician), 9 nurses, 1 vital-statistics clerk and bookkeeper, 1 stenographer. Seven physicians were employed as needed to conduct conferences.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians—44 (some held more than one session); expectant mothers registered and examined—18; infants and preschool children registered and examined—422; visits to conferences by expectant mothers—39; visits by infants and preschool children—3,972.

Child-health conferences conducted by physicians—302 (some held more than one session); infants and preschool children registered and examined—1,688; visits to conferences—12,462.

Defects found in children examined at conferences—1,691; children having defects—1,272. Parents had defects corrected in 851 of the children.

Prenatal conferences conducted by physicians—52; expectant mothers registered—212; number examined—201; visits to conferences—344.

Conferences conducted by nurses, no physician present—1,049; children inspected—4,155; mothers instructed in prenatal care—210; visits to conferences by children—24,310; visits by mothers—521.

Classes for girls in care of infants and preschool children—19 organized; girls enrolled—358; number completing course—313; lessons in course—12.

Classes for mothers—12 organized; mothers enrolled—99; lessons in course—10. The classes were still in progress at the close of the year under review.

Classes for midwives—16, continued from previous fiscal year (the classes are continuous); midwives enrolled—185; lessons in course—6.

Home visits by nurses—31,691 (prenatal cases seen, 399; obstetrical cases, 107; postnatal cases, 425; infants, 2,206; preschool children, 4,710).

Survey—1, to ascertain the names and ages of children in all the towns in the State and to gather data concerning the milk and water supply and general sanitation, important in reducing infant mortality.

Campaigns—3: (1) For immunization of preschool children against diphtheria; 316 conferences were conducted, and 1,571 preschool children were immunized. (2) For promotion of breast feeding. (3) For periodic health examination of infants and preschool children. All were state-wide.

Talks and lectures—90.

Literature prepared—baby book and diphtheria pamphlet, revised.

Literature distributed—47,758 pieces.

New names registered for prenatal letters—472; prenatal letters distributed—369 sets.

Exhibits conducted—2, at fairs, each lasting 5 days. Exhibit material prepared—charts, maps, and graphs. Exhibit material was lent three times.

Scientific articles prepared—Results of Health Work, Diphtheria Prevention, Infant and Maternal Mortality, Results of Survey of Children and Health Conditions in Thirteen Towns.

Statistical studies made—maternal mortality; infant mortality among white and colored, by counties; amount of milk consumed in 1 county.

## Activities—Continued.

Breast feeding was stressed in talks before medical societies and nurses and in the instruction given at health centers and in home visits. It was estimated that only about half the infants in the State are breast fed.

Infants born in the State during the year—4,281; infants under 1 year of age reached by the work of the division—approximately 4,300; preschool children reached—10,185; expectant mothers reached—1,112.

The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics. During the year under review literature on maternal and infant care was sent also to all expectant mothers whose names were reported to the division by physicians, midwives, State nurses, and the Wilmington Visiting Nurse Association.

Counties in the State—3; counties in which maternity and infancy work was done during the year—3.

The following organizations cooperated in the division's work: Delaware Antituberculosis Society, Wilmington Visiting Nurse Association, and the parent-teacher association.

Among the outstanding features of the year's work were the campaign for promotion of breast feeding and the survey of children in all the towns of the State.

## TYPES OF WORK AND SOME RESULTS

The present division of child hygiene in the State board of health is an outgrowth of the State child-welfare commission established in 1921. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on April 7, 1921, in anticipation of the passage of the act by the Federal Congress.

A full-time medical director was secured in 1926 to direct and supervise the field work and field staff. During the past two years nine nurses have given full-time service, and five to seven physicians have given part-time service to the improvement of maternal and infant hygiene in the State.

Cooperation has been maintained with the Delaware Antituberculosis Association and the parent-teacher association, and was established in 1928 with the Wilmington Visiting Nurse Association.

A relatively large number of visits to conferences were made by children during the year under review, and two-thirds of the number found to have defects had the defects corrected.

A survey in the towns of the State with high infant mortality to secure the names of children and to ascertain the condition of milk and water supplies was an important feature of the program in view of the high death rate due to diarrhea and enteritis.

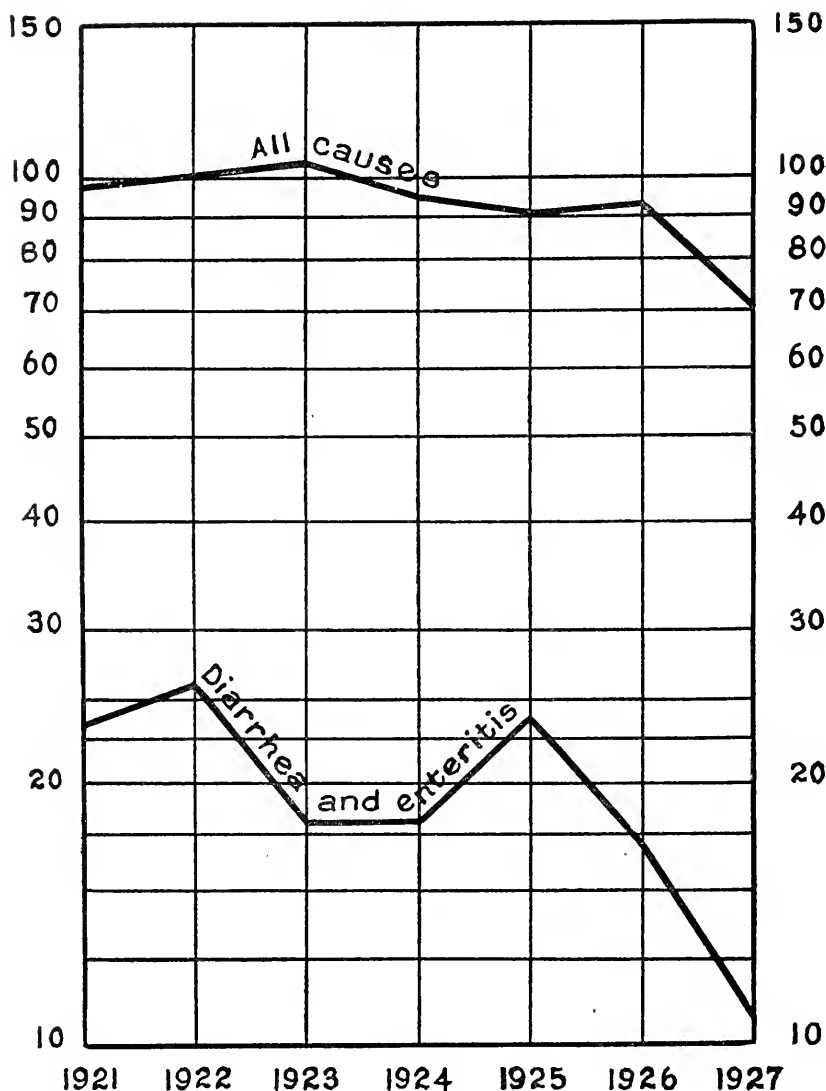
Campaigns for immunization against diphtheria have been conducted the last three years beginning with seven districts in 1926 and extending over the entire State in 1928. In the three years 3,615 children received toxin-antitoxin.

It was estimated that 50 per cent of the babies were artificially fed, and in 1928 breast feeding, the importance of which had already been stressed at itinerant conferences and in the literature distributed, was made the subject of a special state-wide campaign.

The parents of every baby whose birth is registered receive information on the care of the baby through the Baby Book, diet cards, and book on diseases of children. A considerable number of the expectant mothers in the State are also reached with some form of instruction on the value of prenatal care.

The State consists of only three counties, and it has been possible to conduct a more intensive program than in States with larger areas. The effect of the intensive work is reflected in the reduction of both the infant and the maternal mortality rate; 29 fewer babies in every 1,000 born alive died in 1927 than in 1922, and 7 fewer mothers died for every 10,000 babies born alive in 1927 than in 1922.

The infant mortality rates per 1,000 live births for the years 1922 to 1927 were as follows: 1922, 100; 1923, 104; 1924, 95; 1925, 91; 1926, 93; 1927, 71. This decrease was due partly to the general decline from 1922 to 1927 in the infant mortality from diarrhea and enteritis, the 1927 rate being 59 per cent lower than that of 1922. The rates for the individual years were as follows: 1922, 26.1; 1923, 18.1; 1924, 18.1; 1925, 24; 1926, 17.1; 1927, 10.8.



Source: United States Bureau of the Census (Delaware was admitted to the United States birth-registration area in 1921)

Deaths of infants under 1 year of age from all causes and deaths under 1 year of age from diarrhea and enteritis, per 1,000 live births; Delaware, 1921-1927

The maternal mortality rates per 10,000 live births for the years 1922 to 1927 were as follows: 1922, 65.8; 1923, 83.7; 1924, 76.9; 1925, 77; 1926, 92.9; 1927, 58.6. The decline in maternal mortality has been largely in the rural districts. The rural rate in 1922 was 71.7 deaths for every 10,000 live births, whereas in 1927 it had dropped to 32.6. The urban maternal mortality rate was higher in 1927 than in 1922.



## FLORIDA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, bureau of child hygiene and public-health nursing, Jacksonville.

Funds expended: Federal, \$13,907.86; State, \$14,222.83; total, \$28,130.69.

#### Staff:

Director (nurse, part time), 7 nurses (3 part time, 1 for 1 month), 1 auditor (part time), 1 file clerk, 1 stenographer (part time), 1 typist (part time).

Volunteer assistants—68 physicians, 16 dentists, 105 nurses, 319 lay persons.

#### Activities:

Child-health conferences conducted by physicians—75; infants and preschool children registered and examined—1,768; number having defects—1,339. Prenatal conferences conducted by physicians—43; expectant mothers registered and examined—709.

Conferences conducted by nurses, no physician present—255; children inspected—4,543.

Dental conferences—83 conducted. The numbers of expectant mothers and of preschool children receiving dental examination were not recorded separately.

New permanent child-health center—1 established as a result of the maternity and infancy work. It is supported by private funds.

Classes for midwives—937 organized; midwives enrolled plus those carried over from previous year—3,432; lessons in course—4. The 1,611 midwives now recorded as practicing in the State are being supervised, enrolled in classes, and given instruction.

Home visits by nurses—5,333 (prenatal cases seen, 675; postnatal cases, 165; infants, 1,844; preschool children, 2,609).

Group demonstrations—87, of various phases of infant care. Two tables on which were exhibited articles that are harmful and articles that are helpful in the care of the baby were used in connection with these demonstrations.

Talks and lectures—166.

Literature distributed—34,032 pieces.

Nutrition work was done through instruction given to mothers at conferences and in home visits.

Exhibit material prepared—posters, draperies showing health rules, health pictures, and diets.

Breast feeding was promoted through educational work with mothers.

Infants born in the State during the year—34,061; infants and preschool children reached by the work of the bureau—12,134; expectant mothers reached—1,493.

The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics if the parents are known to be able to read.

Counties in the State—67; counties in which maternity and infancy work was done during the year—67.

Since the beginning of the State's cooperation under the maternity and infancy act nine counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.<sup>3</sup>

As a result of the bureau's work county nurses not paid by maternity and infancy funds conducted child-health conferences in four counties. The bureau gave advisory assistance to local organizations conducting maternity and infancy work.

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<sup>3</sup> Another county appropriated funds for maternity and infancy work immediately after the close of the year under review.

## Activities—Continued.

The following organizations cooperated in the bureau's work: State federation of women's clubs, State medical association, State dental association, State public-health association, American Legion, Florida Business and Professional Women's Club, fraternal and civic organizations, and the parent-teacher association. They assisted in organizing conferences, rendered clerical assistance at the conferences, transported mothers and babies to and from conferences, contributed money for defraying expenses of conferences, assisted with publicity, and helped to secure county and State appropriations.

## TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene and public-health nursing was established in the State board of health in 1918. The State accepted the provisions of the maternity and infancy act through the governor's acceptance on February 8, 1922. This was followed by legislative acceptance approved by the governor on June 8, 1923.

The same nurse director has been in charge of the work since cooperation under the act was begun, assisted in the field by a staff of nurses from the State bureau. Volunteer assistance has been given by many physicians, dentists, public-health nurses, and lay persons. Cooperation has been established with an increasing number of professional and lay groups, which now include State medical, dental, and public-health associations, women's organizations, civic clubs, the American Legion, and the parent-teacher association.

Emphasis has been placed on child-health conferences, visits to mothers and infants in their homes, and instruction and supervision of midwives.

At the beginning of cooperation under the maternity and infancy act more than 4,000 women in the State were practicing as midwives. At the close of the year under review the number known to be practicing had been reduced to 1,611, and much improvement was noted in their practice. Physicians now are called frequently by midwives for difficult or abnormal deliveries. Nitrate of silver for use in prevention of blindness in the newborn, which is distributed free through the use of maternity and infancy funds, is regularly requested by the midwives.

The devastating hurricane that swept the State within the period of cooperation interrupted the routine of the maternity and infancy program and added greatly to the adverse influences affecting the lives and health of mothers and children. Yet in the face of this disaster both infant and maternal mortality rates have shown reduction in 1927 compared with 1924 (the year of the State's admission to the birth-registration area).

In 1924 the number of infants who died under 1 year of age in every 1,000 born alive was 82. In 1927 the number was 67, a saving of 15 babies in every 1,000 in 1927 compared with 1924. Both urban and rural areas shared in the reduction. In urban areas the mortality rate for colored infants was 22 per cent lower in 1927 than in 1924; for white infants it was 12 per cent lower. In the rural areas the reverse condition obtained, the rate for white infants being 22 per cent lower in 1927 than in 1924, whereas for colored infants it was only 7 per cent lower.

The number of mothers dying for every 10,000 babies born alive in 1924 was 121; in 1927 the number was 110, a saving of 11 mothers per 10,000 live births. The reduction affected both urban and rural areas, though the situation was not the same for the white and the colored women. In urban areas the rate was 10 per cent lower for white mothers in 1927 than in 1924, and 3 per cent higher for colored mothers. In rural areas it was 5 per cent higher for white mothers and 23 per cent lower for colored mothers.

## GEORGIA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, division of child hygiene, Atlanta.

Funds expended: Federal, \$28,159.73; State, \$23,991.37; total, \$52,151.10.

#### Staff:

Director (physician, part time), 1 physician (part year), 6 nurses (5 part year), 1 laboratory assistant (part time), 1 stenographer, 1 clerk-typist (part year), 1 chauffeur (part year). Seventeen county nurses were paid from maternity and infancy funds (2 part time, 7 part year).

#### Activities:

Child-health conferences conducted by physicians—1,234; infants and preschool children examined—8,033. Many of these conferences were conducted in the "healthmobile," which traveled through rural communities in 21 counties with a staff of a physician, a nurse, and a chauffeur. After the visit of the "healthmobile" in each county a permanent maternity and infancy committee was organized to do follow-up work.

Defects found in children examined at conferences (January-July, 1928)—11,982.

Prenatal conferences conducted by physicians—378; expectant mothers examined—2,998.

Conferences conducted by nurses, no physician present—107; children inspected—421; mothers instructed in prenatal care—70; visits to conferences by children—605.

Dental conferences (January-July, 1928)—41; expectant mothers receiving dental examination—77; preschool children receiving dental examination—101.

New permanent combined prenatal and child-health centers—2 established as a result of the maternity and infancy work. They are supported by maternity and infancy funds and by county funds.

New permanent child-health center—1 established as a result of the maternity and infancy work. It is supported by maternity and infancy funds and by county funds.

New permanent prenatal centers—4 established as a result of the maternity and infancy work. They are supported by maternity and infancy funds and by county funds.

Classes for girls in care of infants and preschool children—191 organized; girls enrolled—4,968; lessons in course—12.

Classes for mothers—66 organized; mothers enrolled—1,904; number completing course—288; number still on roll—1,716.

Classes for midwives—194 organized (excluding 15 organized by a physician lent by the United States Children's Bureau); midwives enrolled—1,764; number completing course—821; lessons in course—10. Permanent midwives' clubs were organized in each county in which classes were conducted.

Home visits by nurses—24,968 (prenatal cases seen, 4,457; obstetrical cases, 96 (report incomplete); postnatal cases, 1,883; infants, 5,939; preschool children, 3,888).

Maternity homes inspected—441 (report incomplete).

Infant homes inspected—731 (report incomplete).

Community demonstrations—19, of a maternity and infancy public health nursing program.

Group demonstrations—633, to groups of mothers, expectant mothers, and midwives. In addition 3,205 demonstrations were made for individuals.

Surveys—3: (1) Of midwives. (2) Of birth registration. (3) Of 7 hospitals.

Campaigns—8: (1) For observance of May Day as Child Health Day, state-wide. (2) For immunization of children against diphtheria, state-wide. (3) For examination of preschool children and correction of their

## Activities—Continued.

defects before the children should enter school, in 1 county. (4, 5, 6) For interesting young girls in organizations for health work, in 1 county. (7) For dental care for children, in 1 city. (8) For promotion of negro health, in 1 city.

Talks and lectures—382.

Literature distributed—105,875 pieces.

A graduate course for nurses in maternity and infancy work was conducted in Atlanta in cooperation with Emory University.

Nutrition work was done through individual instruction and through classes conducted by a dietitian detailed by the State university to the "healthmobile" operated by the division in rural districts.

Exhibits conducted—64.

Article prepared—The Midwife Problem. Material for newspapers and for radio broadcasting was also prepared.

Breast feeding was promoted by literature distributed on the subject.

Infants born in the State during the calendar year 1927—61,636; infants under 1 year of age reached by the work of the division during the year under review—13,709; preschool children reached—12,956; expectant mothers reached—15,563.

Counties in the State—161; counties in which maternity and infancy work was done during the year—77; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—160.

Since the beginning of the State's cooperation under the maternity and infancy act three counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

The following state-wide organizations cooperated in the division's work: State department of education, State league of women voters, Woman's Christian Temperance Union, State federation of women's clubs, fraternal and professional organizations, and the parent-teacher association. Home demonstration agents also cooperated. The assistance consisted mainly in arranging for conferences and other educational work on the maternity and infancy program.

An outstanding achievement of the year was the contacts made with mothers in rural sections of the State.

## TYPES OF WORK AND SOME RESULTS

The division of child hygiene was established in the State board of health in 1919. The governor accepted the provisions of the maternity and infancy act on February 13, 1922. This was followed by legislative acceptance approved by the governor on August 16, 1922.

A physician has directed the work, another physician has acted as clinician on the "healthmobile," and State staff nurses have served in a supervisory capacity and assisted in special field work. The number of public-health nurses paid wholly or in part from maternity and infancy funds and detailed to counties is gradually increasing, 1 having been added in each of the last two years to the 15 that were reported for 1926.

Cooperation has been maintained with the State department of education, professional and fraternal organizations, women's organizations, and the parent-teacher association.

Emphasis has been placed on child-health conferences made possible through the use of the "healthmobile" and on the establishment of permanent centers in counties in which public-health nurses were stationed. Numerous prenatal conferences have been conducted, and many visits to the homes of mothers and children have been included in the work of the nurses.

Work with the negroes has been developed through activities of negro nurses in conducting prenatal conferences and instructing negro midwives. It is estimated that more than 5,000 midwives are in the State; by January 1, 1928, 4,661 had been located. Through the efforts of the division a large number of midwives have received instruction during the period of cooperation and have made application for certificates of fitness to practice. Many who were unfit have ceased to take cases. By January 1, 1928, 2,471 had obtained certificates, 1,529 had failed to qualify for certificates, and 661 were still uninstructed. To receive a certificate, each midwife must attend a school of instruction for 10 periods and must pass a satisfactory examination. She must have a nega-

tive reaction from the Wassermann test, must be vaccinated against smallpox, must agree to abide by the regulations promulgated by the State board of health, and must undertake to report all births promptly to the local registrar of vital statistics. Ampules of nitrate of silver are distributed free, and midwives are required to use this prophylactic in the eyes of the newborn. The follow-up work with midwives has been difficult, and there are problems yet to be met. But that the midwives constitute an indispensable group is indicated by the fact that they delivered 31.4 per cent of the total births reported in the State in 1927.

The State has been both in and out of the death-registration area during the period of cooperation. It was dropped in 1925 owing to the lack of satisfactory legislation. This was secured in 1926, and the State was readmitted to the death-registration area for 1928, being admitted to the birth-registration area the same year. The staff of the division of child hygiene assisted in the campaign to accomplish entry. The work with the midwives in securing better registration of births was an important feature of the campaign.

Owing to the recent admission of the State to the birth-registration area infant and maternal mortality rates are not available from the United States Bureau of the Census. That improvement has occurred in maternal welfare, at least, is indicated by the improvement in the type of midwives now practicing and in the character of their work.

## HAWAII

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

Territorial board of health, division of maternity and infancy, Honolulu.  
Funds expended: Federal, \$12,224.43; State, \$6,725.96; total, \$18,950.39.

#### Staff:

Director (nurse, for 10 months, 10 days; physician, for 1 month, 21 days),  
18 nurses (14 part year, part time), 1 stenographer.

Volunteer assistants—26 physicians, 20 lay persons.

#### Activities:

Child-health conferences conducted by physicians—1,001; infants and pre-school children registered and examined—5,022; visits to conferences—20,216.

Conferences conducted by nurses, no physician present—234; children inspected—925; visits to conferences by children—3,624.

New permanent child-health centers—12 established as a result of the maternity and infancy work. They are supported by maternity and infancy funds and by private funds.

Classes for girls in care of infants and preschool children—4 organized; girls enrolled—84; number completing course—37; lessons in course—10. Home visits by nurses—14,017 (prenatal cases seen, 160; infants, 1,507; preschool children, 481).

Literature distributed—2,600 pieces.

Nutrition work was done through individual instruction to mothers at conferences and in home visits.

Breast feeding was stressed in the instruction given at conferences and in home visits.

Infants born in the Territory during the year—11,543; infants under 1 year of age reached by the work of the division—3,074; preschool children reached—2,873.

The division sends literature on infant hygiene to parents of all infants whose births are registered in the Territorial bureau of vital statistics if the parents are known to be able to read.

Counties in the Territory—5; counties in which maternity and infancy work was done during the year—4. The remaining county is the leper settlement.

The nurses on the division's staff assisted at conferences conducted by local organizations.

Two mission organizations cooperated in the division's work, lending rooms in which child-health conferences were conducted.

The outstanding feature of the year's work was its reorganization by which all the nurses on the staff of the board of health were enabled to devote part time to maternity and infancy work.

### TYPES OF WORK AND SOME RESULTS

The Sixty-eighth Congress extended the benefits of the maternity and infancy act to the Territory of Hawaii. A division of maternity and infancy was established in the Territorial board of health in 1925. The Territory accepted the provisions of the act through the governor's acceptance on April 7, 1924. This was followed by legislative acceptance approved by the governor on April 13, 1925.

In the first two years of cooperation with the Federal Government a medical director had charge of the work. More recently a nurse has been in charge. The same plans of organization and field work have continued through the period of cooperation, a staff of nurses (18 in 1928) working under the direction and supervision of the director.

Cooperation has been given by two mission organizations and by plantation officials, including managers, physicians, and nurses. A number of physicians have given volunteer services at conferences and centers.

The plan of work stresses the organization of health centers, in which consultations for infants and preschool children may be conducted and to which return visits may be made. This insures a continuous program of information to parents on infant and child care and continuous supervision of the children attending the centers. Since 1925, when the work began, 80 centers have been established in the Territory. The division of maternity and infancy has charge of 48 centers, and 32 under the auspices of the plantations are assisted by the division in many ways.

The children under supervision represent many racial groups, including Hawaiians, Japanese, Chinese, Filipinos, and Caucasians. Some of the races have very high infant mortality rates.

As the Territory is not in the United States birth-registration area figures are not available from the United States Bureau of the Census, but Territorial mortality rates indicate a decrease in infant mortality in 1927 compared with 1925. In 1925 the infant mortality rate was 104; in 1927 the rate was 96.

In 1927 the mortality among Hawaiian babies was higher than that among babies of the other races in the Territory. The Territorial figures, however, show a reduction in the rates for Hawaiian babies in 1927, when 237 died in the first year of life in every 1,000 born alive, whereas 258 died in 1925, a saving in 1927 of 21 babies in every 1,000 live births. The rate for Filipino babies also shows a definite reduction; in 1925, 287 babies in every 1,000 born alive died before reaching their first birthday, and in 1927 the rate was 226, or 61 babies saved as compared with 1925. The fact that more children attended centers and conferences in 1927 than in preceding years and that more expectant mothers were given instruction undoubtedly led to better health conditions.

## IDAHO

### STAFF AND ACTIVITIES IN 1928

Administrative agency: State department of public welfare, bureau of child hygiene, Boise.

Funds expended: Federal, \$8,098.54; State, \$2,732.21; total, \$10,830.75.

#### Staff:

Director (physician, part year), 2 physicians (part year, 1 part time), 2 nurses, 1 stenographer-clerk (part year).

Volunteer assistants at child-health conferences—15 physicians, 227 nurses and lay persons.

#### Activities:

Child-health conferences conducted by physicians—33; infants and preschool children registered and examined—1,451.

Defects found in children examined at conferences—2,791; children having defects—1,163. (Follow-up work to ascertain whether defects had been corrected had not been completed at the close of the year.)

Conferences conducted by nurses, no physician present—13; children inspected—279; mothers instructed in prenatal care—39; visits to conferences by mothers—82.

Home visits by nurses—811 (prenatal cases seen, 20; infants, 357; preschool children, 619).

Infant homes inspected—2; inspections made—2.

Surveys—3: (1) Of 57 hospitals. (2) Of midwives, state-wide. (3) Of crippled children, state-wide.

Talks and lectures—39.

Literature prepared—prenatal letters (revised), diet lists.

Literature distributed—7,096 pieces.

New names registered for prenatal letters—474; prenatal letters distributed—499 sets.

Nutrition work was done through individual instruction at conferences and in home visits.

Exhibits conducted—46, of posters on prenatal and infant care and on clothing for the baby. Exhibit material prepared—chart of infant and maternal mortality, by counties.

Statistical studies made—causes of maternal deaths, by counties; causes of infant deaths, by counties.

Breast feeding was stressed in the instruction given at conferences and in home visits.

Infants born in the State during the year—9,971; infants under 1 year of age reached by the work of the bureau—1,591; preschool children reached—1,803; expectant mothers reached—872.

Counties in the State—44; counties in which maternity and infancy work was done during the year—21; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—44.

The following organizations cooperated in the bureau's work: State medical society, State tuberculosis association, federated women's clubs, American Red Cross, joint legislative council, and the parent-teacher association. They arranged for and assisted at child-health conferences. Among the children examined at conferences reported in the foregoing paragraphs 67 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

The outstanding achievement of the year was the reduction of the infant mortality rate from 63 per 1,000 live births in 1926 to 50 in 1927.



## TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene was established in the State department of public welfare in 1919. The State accepted the provisions of the maternity and infancy act through the governor's acceptance on January 23, 1922. This was followed by legislative acceptance approved by the governor on March 13, 1923.

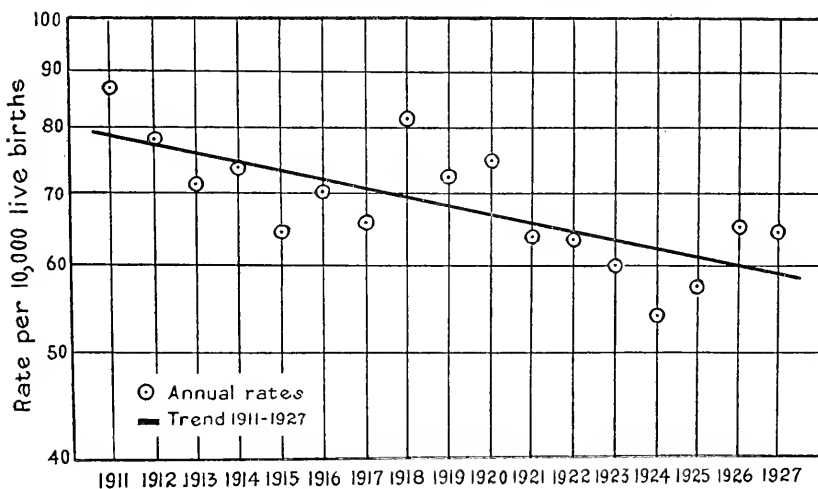
A small staff consisting of a physician and two nurses has conducted the maternity and infancy work, with the assistance of professional and lay volunteer workers and with excellent cooperation from the State medical society, the State tuberculosis association, the American Red Cross, women's organizations, the parent-teacher association, and the joint legislative council.

Information relating to maternal and infant care has been disseminated to a great extent through child-health conferences, which have been the chief activity of the bureau. A special feature of the work for the year ended June 30, 1928, was the survey of 57 hospitals in the State.

Through the work of the State department of public welfare, to which the bureau of child hygiene gave assistance, the State was admitted to the birth-registration area in 1926.

Figures from the United States Bureau of the Census showed a marked reduction in infant mortality in 1927, with a rate of 50 infants under 1 year of age dying in every 1,000 born alive, as compared with the previous year, in which the rate was 63. Owing to the recent admission of the State into the birth-registration area figures from the Bureau of the Census are available for these two years only.

The maternal mortality rate has not declined. In 1926 the rate was 56.9 deaths of mothers in every 10,000 live births; in 1927 the rate was 60.



Source: State figures

Trend of maternal mortality; Indiana, 1911-1927

## INDIANA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, division of infant and child hygiene, Indianapolis.  
Funds expended: Federal, \$32,300.59; State, \$19,020.14; total, \$51,320.73.

#### Staff:

Director (physician), 4 physicians (1 part year), 4 nurses (1 part year), 1 vital-statistics clerk, 1 exhibits director, 1 secretary, 2 clerks (part year), 3 stenographers. Temporary assistants were employed as needed.

#### Activities:

Child-health conferences conducted by physicians—413; infants and pre-school children registered—11,874; number examined—11,838; visits to conferences—11,888.

Defects found in children examined at conferences—65,213; children having defects—11,350.

Classes for mothers and young women—141 organized; mothers and young women enrolled plus those carried over from previous year—7,908; number completing course—7,824; lessons in course—5. These figures include 1,710 students enrolled in classes conducted in 10 colleges.

Group demonstrations—305, on various phases of maternal and child care.

Campaigns—4: (1) For observance of May Day as Child Health Day, state-wide. May Day is regarded as the culmination and also renewal of the year's child-health activities, and preparation for May Day in 1928 was carried on to some extent during the entire year. Celebrations including parades, pageants, window displays, motion pictures, and speeches were conducted throughout the State. The division received reports of county, community, and group programs, and additional towns and communities planned programs but did not submit formal reports. The May Day slogan was "Better children for our Nation—a better Nation for our children." (2) For immunization of children against diphtheria. (3) For periodic health examination of preschool children. (4) For the examination of preschool children and correction of their defects before the children should enter school.

Talks and lectures—885.

Literature distributed—176,473 pieces.

Nutrition work was done through instruction given at classes and at health conferences.

Exhibits conducted—37, at various State and local meetings, the most important being at the State fair. Through the State board of agriculture the State has provided special buildings to house the division's activities for promotion of interest in child care and development. An exhibit consisting of posters, models, and motion pictures was shown, and physical examinations and mental tests were given to 1,376 infants and preschool children. Exhibit material prepared—posters, charts, maps, and models. Exhibit material was lent twelve times.

Scientific articles prepared—Fetal and Neonatal Mortality; Poliomyelitis; Tuberculosis, a Menace to the Infant and Runabout Toddler.

Statistical studies made (mostly based on records of mothers and children attending conferences)—breast feeding; nutrition; defects; defects following childhood infections; eye defects; amount of milk consumed by infants and preschool children; mental development; prenatal, obstetric, and postnatal care; live births and accidents of pregnancy.

Breast feeding was promoted through instruction given at conferences and classes, and through literature distributed on the subject.

Infants born in the State during the year—61,692; infants under 1 year of age reached by the work of the division—8,801; preschool children reached—16,874.

## Activities—Continued.

Counties in the State—92; counties in which maternity and infancy work was done during the year—53; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—91. (One county had had maternity and infancy work previously.)

The division promoted the organization of county child-health boards composed of public-health workers and of official representatives of medical, dental, and nursing associations and local lay organizations. The purpose of these boards is to bring every child to his first day of school in good health by: (1) Up-to-date knowledge of his condition; (2) correct nutrition, care, and training; (3) protection from disease dangers; (4) correction of defects; (5) provision of suitable environment.

The following organizations cooperated in the division's work: Other divisions of the State board of health, State board of charities and correction, State board of education (home-economics and attendance departments), State university (extension service), State dental association, State medical association, State health council, Purdue University (agricultural extension), State child-welfare association, State tuberculosis association, State chamber of commerce, American Legion, State league of women voters, State federation of women's clubs, Young Men's and Young Women's Christian Associations, the parent-teacher association, other professional and fraternal organizations, schools, and churches.

The outstanding achievement of the year was the creation of a state-wide interest in better health standards.

## TYPES OF WORK AND SOME RESULTS

The division of infant and child hygiene was established in the State board of health in 1919. The State accepted the provisions of the maternity and infancy act through the governor's acceptance on February 9, 1922. This was followed by legislative acceptance approved by the governor on March 3, 1923.

The same medical director has had charge of the work since the beginning of cooperation under the act, and the continuity of the program therefore has not been interrupted. The staff has included three to four units, each composed of a physician and a nurse who conduct work in the field.

The division has had the benefit of cooperation from a number of State departments and organizations, county and city officials, professional groups, the parent-teacher association, women's and men's organizations, and girls' and boys' clubs.

Three major activities have marked the progress of the work: First, child-health conferences conducted by units composed of physicians and nurses were extended to every county in the State. These were followed by instruction in prenatal, infant, and child care given to groups of mothers and to college students. Classes for mothers were also held in every county. The units then began conducting conferences for preschool children. Much attention has been given to education and information of the public through exhibits, charts, and other forms of publicity.

The infant mortality rate has declined, reaching in 1927 the lowest rate since the State has been in the United States birth-registration area. The infant and also the maternal mortality rates for 1921 (the year preceding the State's cooperation under the act) and for 1927 were as follows:

*Infant mortality rates (deaths of infants under 1 year of age per 1,000 live births)*

	1921	1927
State.....	71	59
Urban.....	79	63
Rural.....	66	55

*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births)*

	1921	1927
State.....	68.6	65.7
Urban.....	85.7	81.1
Rural.....	56.5	52.1

For the trend of maternal mortality from 1911 to 1927 see the graph on page 63.

## IOWA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of education, division of maternity and infant hygiene, Iowa City.

Funds expended: Federal, \$21,085.31; State, \$21,213.60; total, \$42,298.91.

#### Staff:

Director (director of the extension service of the State university serving), 1 physician, 4 nurses, 1 dentist, 1 dental hygienist (2 months), 1 social worker, 1 specialist in child welfare, 1 vital-statistics clerk, 3 stenographers.

#### Activities:

Child-health conferences conducted by physicians—181; infants and preschool children registered and examined—4,274.

Defects found in children examined at conferences—4,458; children having defects—3,532. Reports made by the nurses who followed up the children examined at conferences during the past five years showed that 73.9 per cent of the children having defects had the defects corrected, were improved, or were under active treatment.

Dental conferences—19; preschool children receiving dental examination—306.

"Mothers' health day" conferences—149; attendance—7,582 (5,752 women, 1,550 high-school girls, 262 fathers, 18 physicians). These conferences were conducted by a physician and nurse from the division and were arranged in cooperation with local women's clubs and parent-teacher associations. Lectures were given and slides, films, and charts shown on prenatal and infant care; exhibits were made of clothing for mother and baby, obstetrical package, and preparations for home delivery.

Home visits by nurses—325 (infants seen, 180; preschool children, 145).

Campaign—1, in cooperation with the parent-teacher association, in 1 county, for examination of rural preschool children and correction of their defects before the children should enter school.

Talks and lectures—214.

Literature distributed—73,600 pieces.

Graduate courses in oral hygiene for nurses—7; attendance—45.

Exhibits conducted—136, at fairs and "mothers' health day" conferences.

Infants born in the State during the year—44,296; infants under 1 year of age reached by the work of the division—2,126 (exclusive of those reached by literature distributed); preschool children reached—3,206 (exclusive of those reached by literature distributed); expectant mothers reached—1,012.

The division cooperates with the State board of health in sending literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

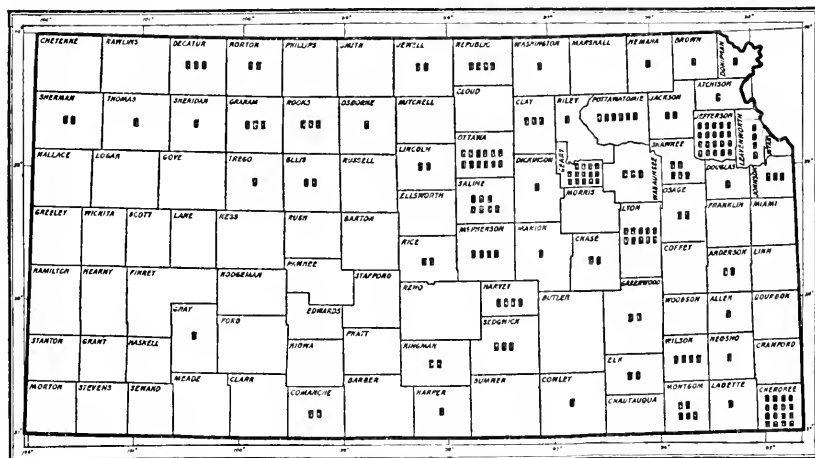
Counties in the State—99; counties in which maternity and infancy work was done during the year—52; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—99.

The following organizations cooperated in the division's work: State dental society, State tuberculosis association, State farm bureau, and the parent-teacher association. Among the children examined at conferences reported in the foregoing paragraphs 845 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

## TYPES OF WORK AND SOME RESULTS

A division of maternity and infant hygiene was established in 1922 in the extension division of the State university, which is under the control of the State board of education. The State accepted the provisions of the maternity and infancy act through the governor's acceptance on January 21, 1922. This was followed by legislative acceptance approved by the governor on April 2, 1923.

The same director has had charge of the work during the entire period of cooperation. Physicians, dentists, and nurses have served on the division's staff, and cooperation has been given by State and county medical societies, the State dental society, the tuberculosis association, the parent-teacher association, the State farm bureau, and women's organizations.



Distribution of 182 child-health conferences in Kansas, 1927-28

The program has stressed both prenatal and child-health conferences, which have been itinerant in character. Oral hygiene has also received much attention through dental conferences for preschool children. Mothers' meetings, in which instruction in infant and prenatal care is given by physicians and nurses, have been well attended.

There has been no appreciable change in infant mortality rates since the State was admitted to the United States birth-registration area in 1924. Maternal mortality rates have declined in the rural areas, in which 52 mothers died for every 10,000 live births in 1924, whereas 46 died in 1927, a saving of 6 rural mothers for every 10,000 babies born alive in 1927 compared with 1924. Much information in regard to prenatal care has reached the rural population through prenatal conferences and mothers' health day conferences, which fathers also attended; apparently this work is reflected in the decline in the rural maternal mortality rate.

## KANSAS

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, division of child hygiene, Topeka.

Funds expended: Federal, \$15,261.76; State, \$10,000; total, \$25,261.76.

#### Staff:

Director (physician), 3 nurses (1 for 1 month), 1 vital-statistics clerk, 1 stenographer, 1 clerk. Four county nurses were paid in part from maternity and infancy funds.

Volunteer assistants—7 physicians, 10 lay persons.

#### Activities:

Child-health conferences conducted by physicians—175; infants and pre-school children registered and examined—3,750. Assistance was given at the conferences by 177 local physicians, 63 dentists, 155 nurses, and 679 lay persons. The number of mothers attending was 3,353; the number of fathers attending was 368; approximate number of other visitors, 4,345.

Defects found in children examined at conferences—4,674; children having defects—2,008.

Conferences conducted by nurses, no physician present—7; children inspected—137; visits to conferences—180.

Classes in maternal and infant hygiene were conducted in three State teachers' colleges to prepare students to teach the subject to girls in the seventh and eighth grades. Similar courses were conducted in three other schools and a house-keeping center. Students enrolled—more than 200; average number of lessons in course—5.

Home visits by nurses—521 (prenatal cases seen, 152; infants, 155; pre-school children, 336).

Maternity homes inspected—6; inspections made—12.

Infant homes inspected—54; inspections made—108.

Group demonstrations—20, at the classes conducted in the State teachers' colleges.

Surveys—3: (1) Of midwives. Nurses visited the few midwives known to be practicing in the State and found most of them fairly well qualified to handle normal cases. The number of midwives in the State is decreasing yearly. (2) Of birth registration, to assist the State division of vital statistics. The nurses called on local registrars of vital statistics and checked the birth reports. Fifteen counties were completed. Visits were made also to physicians to enlist their interest in the prompt reporting of births attended by them. (3) Of health conditions among mothers and children on an Indian reservation (not completed at the close of the year under review). The nurses also assisted in a venereal-disease survey conducted by the State health officer.

Campaign—1, to have preschool children qualify as "9-pointers" throughout the State. To qualify, the children must have normal vision, hearing, teeth, throat, posture, and weight, be vaccinated against smallpox, and be immunized against typhoid fever and diphtheria. At a picnic for 9-point children sponsored by one county health unit on May Day in observance of Child Health Day more than 1,200 9-point children were present.

Talks and lectures—53.

Literature prepared—Mothers' Manual (revised), 9-point pamphlet, set of 4 diet cards.

Literature distributed—212,376 pieces.

New names registered for prenatal letters—73; prenatal letters distributed—355 sets.

**Activities—Continued.**

Nutrition work was done through individual instruction at health conferences.

Exhibits conducted—6. Exhibit material prepared—charts on contagious diseases. Exhibit material was lent eight times.

Breast feeding was stressed in the instruction given to mothers at conferences.

Infants born in the State during the year—35,234; infants under 1 year of age reached by the work of the division—approximately 35,000; preschool children reached—2,815; expectant mothers reached—approximately 700.

The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—105; counties in which maternity and infancy work was done during the year—105.

The following organizations cooperated in the division's work: State federation of women's clubs, State league of women voters, American Legion auxiliary, fair associations, and the parent-teacher association. Among the children examined at conferences reported in the foregoing paragraphs 250 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

Among the outstanding features of the year's work were the child-health conferences conducted and the classes in maternal and infant hygiene taught at the State teachers' colleges.

**TYPES OF WORK AND SOME RESULTS**

The division of child hygiene was established in the State board of health in 1915. This was one of the earliest among the State divisions or bureaus of child hygiene or welfare established in the United States. The State accepted the provisions of the maternity and infancy act through the governor's acceptance on January 4, 1922, but the next State legislature that met failed to enact legislative acceptance, and cooperation ceased in September, 1923. In 1927 the State again accepted the provisions of the act, through legislation approved by the governor on March 16, 1927. An expanding program has been possible as a result of the larger funds available.

Since early in 1927 the staff has consisted of a medical director and two staff nurses. The medical director in addition to his executive work has given much time to the field work, conducting conferences and giving addresses. The two nurses have been almost constantly in the field, arranging and assisting at conferences and giving courses in infant care. Four nurses paid in part from maternity and infancy funds have been detailed to counties. The distribution of the conferences conducted—one of the major activities in the field—is shown in the map on page 67. Another phase of the work done directly with the children is the 9-point campaign.

A notable feature of the program was the instruction in infant care and prenatal care given at three State teachers' colleges, Western University, and several schools. Education in infant care is also promoted through the distribution of literature to parents.

The division of child hygiene is charged with the inspection of institutions, orphanages, and boarding homes where infants are kept as well as with inspection of maternity homes. In these institutions approximately 2,200 children receive care.

The division has had the benefit of cooperation from county health departments, fair associations, women's organizations, and the parent-teacher association, and of volunteer service from many physicians, dentists, nurses, and lay workers.

Infant mortality rates were lower in 1927 than in any other year since the State was admitted to the birth-registration area. In 1917, the year of the State's admission to the area, the infant mortality rate was 77; in 1926 it was 65; and in 1927 it had dropped to 55.

The maternal mortality rate was lower in 1927 than in any previous year since the State was admitted to the birth-registration area, with the exception of 1924, when it was practically the same. In 1917, the year of the State's admission to the area, the rate was 75.9 for every 10,000 live births; in 1926 the rate was 69.7; in 1927 it had declined to 63.1.

## KENTUCKY

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, bureau of maternal and child health, Louisville.  
Funds expended: Federal, \$26,298.64; State, \$21,298.64; total, \$47,597.28.

#### Staff:

Director (physician), 4 physicians (3 part year, 1 part time), 8 nurses (2 part year, 1 part time), 2 nutritionists (1 part year), 1 milk inspector (part time, part year), 1 birth-registration clerk, 1 vital-statistics clerk, 1 stenographer, 8 clerks (2 part time). Two county nurses were paid in part from maternity and infancy funds.

#### Activities:

Child-health conferences conducted by physicians—266; infants and pre-school children registered and examined—4,192.

Defects found in children examined at conferences—5,121; children having defects—3,216. Parents had defects corrected in 500 of the children.

Prenatal conferences conducted by physicians—14; expectant mothers registered—50; number examined—49; visits to conferences—110.

Conferences conducted by nurses, no physician present—205; children inspected—2,450; mothers instructed in prenatal care—65.

New permanent child-health centers—12 established as a result of the maternity and infancy work. They are supported by the State board of health and by county funds.

New permanent prenatal center—1 established as a result of the maternity and infancy work. It is supported by local funds. Cooperation in the work of the prenatal clinic in the city hospital of the University of Louisville by having one of the State staff nurses act as registrar has been continued.

Courses of lectures including child care and the essentials of prenatal care were given to groups of juniors and seniors in all the private schools, junior colleges, and State normal schools in the State.

Classes for midwives—15 organized; midwives enrolled and completing course—231; lessons in course—2. A three months' intensive course for white women in midwifery and child training was begun at a small hospital in a mountain section, where there are facilities for training three midwives at a time. Eight women had completed the course at the close of the year under review, and many others were waiting for admission.

Home visits by nurses—350 (prenatal cases seen, 102; obstetrical cases, 10; postnatal cases, 50; infants, 200; preschool children, 250).

Maternity homes inspected—4; inspections made—4.

Infant homes inspected—3; inspections made—3.

Community demonstrations—4, in 4 counties. A maternity and infancy nurse was detailed to each county for a period of 6 weeks to conduct an intensive maternity and infancy public health nursing program in an effort to interest the county in employing a public-health nurse.

Group demonstrations—200, on various phases of child care, at child-health conferences. Films, posters, and a nutrition exhibit were used in connection with these demonstrations.

Survey—1, in 1 county, to ascertain the number of expectant mothers and to urge them to attend the newly established prenatal center.

The bureau is cooperating in a study of maternal mortality being conducted in the State by the United States Children's Bureau with the indorsement of the State medical society.

Campaign—1, state-wide, to have children qualify as 5-point blue-ribbon children by being free from defects in eyes, ears, nose, and throat and being of normal weight. In Louisville, where the bureau cooperated



## Activities—Continued.

with a number of local organizations in the work, the campaign culminated in a Child Health Day program, and 7,000 children who had met blue-ribbon standards were reviewed in a city park by the mayor and a group of representative citizens. Twenty-five other communities reported blue-ribbon campaigns.

## Talks and lectures—1,112.

Literature prepared—Blue Ribbon Standards, diet cards, and child-health literature revised and brought up to date.

Literature distributed—317,559 pieces.

New names registered for prenatal letters—1,850; prenatal letters distributed—4,000 sets.

A graduate course for nurses, consisting of lectures and demonstrations, was conducted at the annual meeting of county public-health nurses and nurses on the staff of the bureau.

A graduate course for physicians in pediatrics and obstetrics was arranged in connection with an annual 2-week clinic at the University of Kentucky. Lectures and demonstrations were given by members of the staff of the bureau of maternal and child health.

Nutrition work was done through nutrition classes and individual instruction to mothers. Classes organized—35; children enrolled—1,020. A summer health and nursery school for preschool children was conducted for 8 weeks in 1 city, with an enrollment of 27 children.

Exhibits conducted—25, consisting of a food and nutrition exhibit, posters, and literature, at State and local meetings and at county fairs. Exhibit material prepared—nutrition exhibit, with display of correct foods; sun-bath suits; and posters on proper feeding. Exhibit material was lent fifty-two times.

Statistical studies made—results of prenatal care of prospective mothers attending a prenatal clinic; midwives and deliveries attended by them. In 1927 the 2,096 midwives in the State attended 11,579 deliveries, as follows:

## Number of midwives attending—

1 delivery .....	700
2 deliveries.....	275
3 deliveries.....	209
4 deliveries.....	135
5 deliveries.....	105
6-10 deliveries.....	330
11-14 deliveries.....	155
15 deliveries or more.....	187

Breast feeding was stressed in literature distributed and in instruction given to individuals.

The bureau serves as a clearing house for all child-health activities in the State, rendering advisory service to local organizations and supervisory service to public-health nurses and full-time county health units receiving State aid. One staff nurse gave her full time to organizing permanent child-health work and supervising child-health centers established under the health units. Among the activities conducted by county public-health nurses who received advisory and supervisory assistance from the bureau were the following classes, for which an outline issued by the bureau was used: (1) Classes for girls—58 organized, with an attendance of 325 girls. The course consisted of 24 lessons, and the instruction given covered care and feeding of the baby and health habits. (2) Classes for mothers—27 organized, with an attendance of 408 mothers. The course consisted of 18 lessons, and the instruction given covered the essential features of prenatal care, the necessity of having a physician for delivery, simple home nursing, and the care of the infant and preschool child.

As a result of the bureau's work city health departments and county nurses developed the 5-point blue-ribbon standards for school children, and many child-health conferences were conducted by local health committees.

Infants born in the State during the year—approximately 60,000; infants under 1 year of age reached by the work of the bureau—approximately 62,000; preschool children reached—approximately 65,000; expectant mothers reached—22,450.

The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

## Activities—Continued.

Counties in the State—120; counties in which maternity and infancy work was done during the year—120.

Since the beginning of the State's cooperation under the maternity and infancy act 40 counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

The following organizations cooperated in the bureau's work: State league of women voters, State federation of women's clubs, local women's clubs, fraternal organizations, and the parent-teacher association. Among the children examined at health conferences reported in the foregoing paragraphs 2,002 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

Among the outstanding features of the year's work were the development of the 5-point blue-ribbon standards for children and the adoption of these standards by a majority of the counties carrying on health work.

## TYPES OF WORK AND SOME RESULTS

The bureau of maternal and child health was established in the State board of health in 1919. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on March 24, 1922.

The same medical director has been in charge of the work of the bureau from the beginning of cooperation with the Federal Government. Physicians, nurses, nutritionists, and an educational instructor have served on the staff. Nurses paid in part from maternity and infancy funds have been detailed to counties.

Cooperation has been given by women's organizations, the parent-teacher association, men's service clubs, and fraternal and religious organizations, which have assisted in child health conference work and in the establishment of child-health centers.

Important features of the program have been the conducting of child-health conferences, the establishment of permanent health centers, instruction of special groups in prenatal and child care (including classes for mothers and classes for girls in infant care), instruction of midwives (including a training center for mountain midwives), and a provision through a prenatal center of instruction and clinical experience for undergraduate students in the medical school of the University of Louisville.

Nitrate of silver has been distributed free to physicians and midwives through the use of maternity and infancy funds. A marked reduction in ophthalmia neonatorum has resulted from its use.

It has been the practice to send literature on infant and child care and care of the nursing mother with certificates of registration to parents of all infants whose births are registered.

An important feature of the work has been the assumption of local responsibility for the maternity and infancy work in 40 counties. These counties have assumed the support of the work, but the bureau continues to render advisory service.

The study of maternal mortality being made in the State by the United States Children's Bureau with the indorsement of the State medical society is expected to furnish valuable information that will aid in planning further maternity and infancy work.

The effect of the maternal and infant welfare program is apparent in reductions in maternal and infant mortality rates during the period of the State's cooperation under the maternity and infancy act. The rates in 1927 were the lowest for both mothers and infants since 1917, the year in which the State was admitted to the United States birth-registration area. The infant and maternal mortality rates for 1922 (the year in which cooperation was begun) and in 1927 were as follows:

*Infant mortality rates (deaths of infants under 1 year of age per 1,000 live births)*

	1922	1927
State.....	69	61
Urban.....	83	71
Rural.....	67	59

*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births)*

	1922	1927
State -----	60.7	49.4
Urban -----	96.6	62.1
Rural -----	54.3	46.5

These figures show a saving in mothers' and babies' lives in urban and rural areas as well as in the State as a whole. The mortality rate in the State was 30.6 per cent lower for colored infants in 1927 than in 1922; for white infants it was 9.4 per cent lower. The mortality rate from puerperal causes was 41.3 per cent lower for colored mothers in 1927 than in 1922; for white mothers it was 16 per cent lower. In urban areas the mortality rate for colored mothers was 64.2 per cent lower in 1927 than in 1922, and in rural areas it was 28.2 per cent lower. The effect of the prenatal clinic at the Louisville Hospital, which is conducted with the cooperation of the bureau of maternal and child health, seems to be clearly shown by the marked decline in the urban mortality rate among colored mothers.

## LOUISIANA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, bureau of child hygiene, New Orleans.  
Funds expended: Federal, \$19,400.69; State, \$14,400.69; total, \$33,801.38.  
Staff:

Director (part time), 3 physicians (2 part year, 1 part time), 7 nurses (3 part year), 3 dentists (2 part year), 1 midwife teacher (part year), 1 record clerk (part time), 1 stenographer (part year). Six parish<sup>4</sup> nurses were paid in part from maternity and infancy funds. Additional physicians, a dentist, and a nurse were employed for conference and organization work as needed.

#### Activities:

Child-health conferences conducted by physicians—484; infants and preschool children registered and examined—9,881; visits to conferences—11,424.

Defects found in children examined at conferences—30,268; children having defects—9,474.

Conferences conducted by nurses, no physician present—97; children inspected—1,926; mothers instructed in prenatal care—489.

Dental conferences—196; preschool children receiving dental examination—9,468.

New permanent child-health centers—21 established in connection with parish health units as a result of the maternity and infancy work. They are supported by State and parish funds and by the International Health Division of the Rockefeller Foundation.

Classes for girls in care of infants and preschool children—6 organized; girls enrolled—163; lessons in course—30. These classes were organized as part of the maternity and infant-hygiene program for the colored population in two communities. Several lessons were given by a colored nurse from the bureau's staff, and the classes were then turned over to local workers.

Classes for mothers—5 organized; mothers enrolled—116. Three of the classes were for colored mothers, 63 of whom completed an intensive course of 4 lessons. The other two classes, for whom the course was divided into 12 lessons, were still in progress at the close of the year under review.

Classes for midwives—74 organized; midwives enrolled plus those carried over from previous year—768; number completing course—154; lessons in course—6.

Home visits by nurses—3,398 (prenatal cases seen, 721; postnatal cases, 3; infants, 541; preschool children, 620). Visits to midwives—1,513.

Community demonstrations—5, of a maternity and infant-hygiene public health nursing program. Two were for colored members of the community.

Group demonstrations—251, at midwives' classes, mothers' classes, and girls' classes.

Surveys—3: (1) Of midwives, in 8 parishes. (2) Of preschool children, in 1 parish, to register them for conferences. (3) Of infants, in 1 town, to give instruction concerning their care and feeding.

Talks and lectures—984 (at child-health conferences, 164; to groups interested in birth registration, 235; to groups of expectant mothers, 130; to community clubs and other organizations and groups, 455).

Literature distributed—33,269 pieces.

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<sup>4</sup> In Louisiana the parish is the civil division corresponding to the county in other States.

**Activities—Continued.**

New names registered for prenatal letters—645; prenatal letters distributed—645 sets.

Nutrition work was done through individual instruction given at conferences and in home visits.

Exhibits conducted—37. One was on the health car of the State board of health, which toured the State. This consists of two Pullman cars equipped with laboratory, scientific exhibits, charts, clowns, models, and other material covering many phases of public-health work, including child hygiene. The others were at fairs and at various meetings.

Exhibit material prepared—charts, posters, clothing, and food models. Exhibit material was lent forty-nine times.

Articles prepared—Care of Baby in Hot Weather, Why Children Refuse to Play, Whooping Cough, Infantile Paralysis, Vincent's Angina, May Day.

Statistical studies—births attended by physicians and midwives in parishes having health units; maternal and infant mortality in these parishes; deaths of infants under 1 year of age, by age group and color.

Breast feeding was stressed in instruction given at conferences, in literature distributed, and in motion pictures shown. Midwives were specially instructed in the importance of breast feeding.

Infants born in the State during the year—40,400; infants under 1 year of age reached by the work of the bureau—3,694; preschool children reached—13,993; expectant mothers reached—1,855.

Parishes in the State—64; parishes in which maternity and infancy work was done during the year—37; parishes in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—62.

Since the beginning of the State's cooperation under the maternity and infancy act 24 parishes have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

The following organizations cooperated in the bureau's work: State federation of women's clubs, the State parent-teacher association and local associations, business and professional women's clubs, State and local public-health and tuberculosis associations, New Orleans Needlework Guild, and community clubs. They assisted by planning for and helping at child-health conferences, urging registration of births, and distributing literature. The Needlework Guild furnished layettes to needy mothers. Among the children examined at conferences reported in the foregoing paragraphs 348 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

Among the outstanding features of the year's work were the increases in the number of dental conferences conducted and in the number of preschool children examined at health conferences.

**TYPES OF WORK AND SOME RESULTS**

The bureau of child hygiene was established in the State department of health in 1912. Louisiana was the first State to establish such a bureau. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on July 14, 1921. This permitted an expansion of the bureau's activities.

The work of the bureau during the period of cooperation with the Federal Government has been in charge of a director with considerable previous experience in public-health work. A central staff of physicians, nurses, and dentists has conducted child-health conferences, dental conferences, and other educational work in the field, and four to six nurses paid in part from maternity and infancy funds have been detailed to parish health units the past few years.

Cooperation has been given by State and local public-health and tuberculosis associations, women's organizations, and community clubs. The parent-teacher association assumed the responsibility for "preschool drives."

Features of the program have been the holding of health conferences and the establishment of permanent child-health centers, work done with midwives, assistance given to establishment of full-time health units, and efforts made to develop permanent maternity and infancy work in communities. Some results of the work are shown by the number of permanent child-health centers established during the year ended June 30, 1928 (21), and the number of

parishes (24) that assumed financial responsibility for maternity and infancy work begun with maternity and infancy funds.

The use of nitrate of silver in the eyes of the newborn has increased. The bureau has assisted in the free distribution of ampules of this prophylactic since 1925 and estimates that 90 per cent of the midwives now make use of it.

The State was admitted to the United States birth-registration area in 1927, the bureau's assistance in the campaign to accomplish entry having been one of its major activities. Mortality rates are available from the United States Bureau of the Census for that year only. Infant mortality rates (deaths of infants under 1 year of age per 1,000 live births) for 1927 were 77 for the State as a whole, 89 for urban areas, and 73 for rural areas. Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births) were 90.9 for the State as a whole, 123.2 for urban areas, and 77.1 for rural areas.

## MAINE

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, division of public-health nursing and child hygiene, Augusta.

Funds expended: Federal, \$14,926.52; State, \$10,000; total, \$24,926.52.

#### Staff:

Director (nurse, not paid from maternity and infancy funds), 1 nurse supervisor, 12 nurses (part year, 3 for 1 month or less), 1 nutritionist (11 months), 1 clerk, 1 stenographer (part year).

#### Activities:

Child-health conferences conducted by physicians who volunteered their services—85; infants and preschool children registered and examined—1,027; visits to conferences—1,169.

Defects found in children examined at conferences—1,089; children having defects—614.

Conferences conducted by nurses, no physician present—92; children inspected—413; mothers instructed in prenatal care—16; visits to conferences by children—631; visits by mothers—20.

Classes for girls in care of infants and preschool children—41 organized; girls enrolled—603; number completing course—344; lessons in course—12.

Classes for mothers—5 organized; mothers enrolled—96. Each of the five groups met monthly to study child care and prenatal care.

Home visits by nurses—8,674 (prenatal cases seen, 248; obstetrical cases, 13; postnatal cases, 45; infants, 1,122; preschool children, 2,857).

Group demonstrations—622, at fairs and at meetings of farm-bureau groups and other organized groups.

Campaign—1, for observance of May Day as Child Health Day, state-wide. One hundred and nine towns reported or wrote to the division in regard to their local celebrations, and many others carried out a program but did not submit a report.

Talks and lectures—262.

Literature prepared—Meals for the Growing Child, Suggestions for the Lunch, Diet for Underweights, Diet for Overweights, Foods That Should Be Eaten Each Day, Food for the Family.

Literature distributed—425,046 pieces.

New names registered for prenatal letters—1,151; prenatal letters distributed—1,313 sets.

Nutrition work was done through instruction given in talks, home visits, and conferences. Eight nutrition classes were conducted for student nurses.

Exhibits conducted—255, at conferences, fairs, and celebrations of May Day as Child Health Day. Exhibit material prepared—model nursery. Additional exhibit material was purchased so that each nurse might have posters, films, material needed at child-health conferences, and articles for demonstrating layette, care of the mother at confinement, and care of the baby. Exhibit material was lent nearly two hundred times, for demonstrations of infant care in schools, for the use of organizations conducting class work, and for fairs and conferences.

Breast feeding was stressed in talks and in advice given to expectant mothers.

Infants born in the State during the year—approximately 16,000; infants under 1 year of age reached by the work of the division—3,408; preschool children reached—3,271; expectant mothers reached—1,561.

## Activities—Continued.

Letters offering literature on infant hygiene were sent with the birth certificates to parents of all infants whose births were registered in the State bureau of vital statistics. In response to these letters 2,221 mothers requested such literature.

Counties in the State—16; counties in which maternity and infancy work was done during the year—15.

The division's work has stimulated other organizations to put greater emphasis on work for expectant mothers and preschool children. Occasionally the nurses have conducted conferences for organizations.

The State public-health association and the American Red Cross cooperated in the division's work.

## TYPES OF WORK AND SOME RESULTS

The division of public-health nursing and child hygiene was established in the State department of health in 1920. The governor and council did not accept Federal funds when the funds became available in 1922, but appropriated from the State contingent fund \$5,000 to carry on the work until the State legislature could take action. The legislature of 1923 voted to match \$10,000 of the Federal funds available, but the governor vetoed the measure. However, an appropriation of \$10,000 a year for two years was granted to maintain the division. Finally the provisions of the maternity and infancy act were accepted through legislative enactment approved by the governor on April 12, 1927. Since that time an expansion of the maternity and infancy program has been possible.

A nurse not paid from maternity and infancy funds directs the work of the division. During the fiscal year 1928 the staff (expanded to include 13 public-health nurses and a nutritionist) reached all except one of the counties in the State with some phase of maternity and infancy work, and eight counties had nurses assigned to them.

The nurses and the nutritionist have stressed in their contacts the importance of attention to the nutrition of children. Nurses have had opportunity to emphasize this in their visits to the homes of mothers and preschool children, the talks they have given, the demonstrations made, and the exhibits conducted. The nurses also arranged the child-health conferences at which local physicians made examinations as well as conducting a number of conferences at which they themselves inspected children.

Classes for girls and women in infant and child care, conducted by nurses, have been an effective method of imparting information on this subject. Literature on infant hygiene has also been widely distributed through requests from parents of infants whose births were registered.

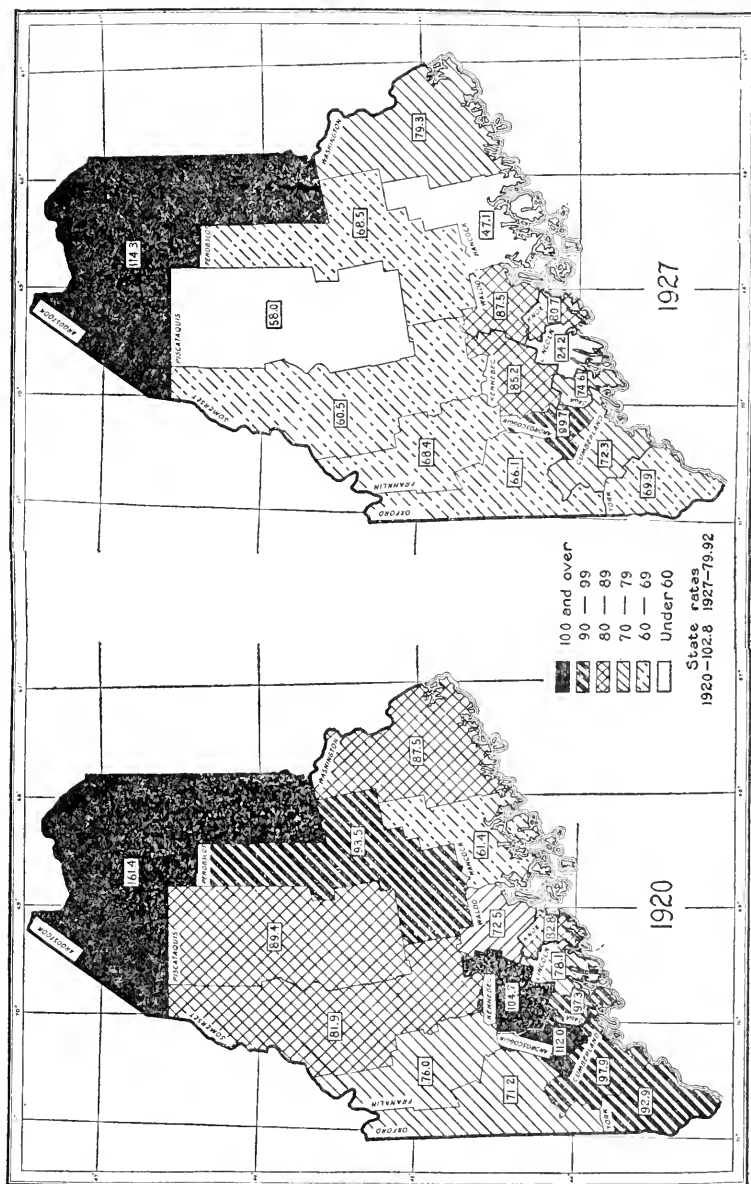
The division has had the benefit of cooperation from the State public-health association and the American Red Cross.

Maternity and infancy funds have been used for the free distribution of nitrate of silver to prevent blindness in the newborn.

There has been a downward trend in the infant mortality rate since the organization of the division. The number of infants under 1 year of age dying in every 1,000 born alive in 1920 (the year in which the division was established) was 102; in 1927 this number was 80. A comparison of infant mortality by counties for 1920 and 1927, based on State figures, shows that in 1920 3 counties had rates above 100 and 11 counties had rates higher than the present State rate of 80. The lowest rate in any county in 1920 was 61.4. In 1927 only 1 county had an infant mortality rate above 100, and only 5 had rates above 80. One county had reached the low rate of 24.2 and another the comparatively low rate of 47.1. Intensive work is now under way to reduce the infant mortality rate in the county in which more than 100 babies died in their first year of life.

For maternal mortality the general trend has been downward since 1920. In that year the rate of maternal deaths per 10,000 live births was 84.8; in 1927 it was 79.5.





Infant mortality rates, by counties; Maine, 1920 and 1927

## MARYLAND

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, bureau of child hygiene, Baltimore.

Funds expended: Federal, \$27,158.36; State, \$15,113.84; total, \$42,272.20.

#### Staff:

Director (physician), 1 physician (part year), 1 nurse (part year), 1 health-education worker (part time), 2 stenographers, 2 clerks (1 part time), 1 chauffeur (part year). Sixty physicians and eight dentists were employed as needed to conduct conferences. Twenty county nurses were paid in part from maternity and infancy funds.

Volunteer assistants—10 physicians, 2 dentists, 95 lay persons.

#### Activities:

Child-health conferences conducted by physicians—440; infants and pre-school children registered and examined—6,402; visits to conferences—7,145.

Defects found in children examined at conferences—8,225; children having defects—5,224; parents had defects corrected in 1,035 of the children.

Prenatal conference conducted by physician—1; expectant mothers registered and examined—3. The prenatal-conference work was not begun until June, 1928.

Conferences conducted by nurses, no physician present—32; children weighed and measured—277; mothers instructed in prenatal care—165; visits to conferences by children—320; visits by mothers—201.

Dental conferences—53; preschool children receiving dental examination—527.

New permanent combined prenatal and child-health centers—2 established as a result of the maternity and infancy work. They are supported by maternity and infancy funds and by local funds.

New permanent prenatal center—1 established as a result of the maternity and infancy work. It is supported by maternity and infancy funds and by local funds.

Classes for girls in care of infants and preschool children—9 organized; girls enrolled and completing course—161; lessons in course—8.

Classes for mothers—49 organized; mothers enrolled—726; number completing course—521; lessons in course—8.

Classes for midwives—2 organized; midwives enrolled and completing course—7; lessons in course—8. Informal instruction was given to small groups of midwives in several counties.

Home visits by nurses—6,462 (prenatal cases seen, 876; postnatal cases, 534; infants, 1,935; preschool children, 2,268).

Group demonstrations—45, at child-health conferences and meetings.

Survey—1, of children who were to enter school in the fall. This was made in cooperation with parent-teacher associations, county superintendents of schools, and public-health nurses.

The bureau is cooperating with the United States Children's Bureau in a study of maternal mortality being made in the State with the indorsement of the State medical society.

Campaign—1, for the state-wide observance of May Day as Child Health Day.

Talks and lectures—93.

Literature prepared—Sound Teeth Are Faithful Guardians of Your Child's Health, Diet for the Young Child, Diet for the Expectant Mother.

Literature distributed—127,850 pieces.

Nutrition work was done through nutrition classes conducted by the county nurses who were paid in part from maternity and infancy funds.

## Activities—Continued.

Exhibits conducted—75, consisting of motion pictures, posters, dental exhibits, and baby clothing. Exhibit material prepared—motion-picture film depicting the work of the bureau of child hygiene. Exhibit material was lent forty-five times.

Statistical studies made—causes of infant mortality, by groups according to the international classification, indicating percentage of total and rates per 1,000 live births in each group for Maryland in comparison with those for the United States birth-registration area for 1910-1915 and for 1920-1924 and for the counties in comparison with Baltimore city (white and colored separately) for 1921-1926; obstetrical service in the counties in comparison with Baltimore city—attendance of physicians and of midwives at births (white and colored), and rates for 1917-1926; still-births and rates for the counties in comparison with Baltimore city for 1922-1926; maternal mortality from puerperal causes in three groups: (1) Eclampsia, (2) septicemia, (3) all other causes, in the counties, in Baltimore city, and in the State (white and colored) for 1917-1926; negro death rates, by age groups, in comparison with rates for white population in the same age groups, for 1916-1925.

Breast feeding was promoted by instruction given to mothers at child-health conferences and in home visits.

Infants born in the State during the year—16,261 (exclusive of those born in Baltimore city, in which the State bureau does no work as the city has its own bureau of child hygiene); infants under 1 year of age reached by the work of the bureau—approximately 14,000; preschool children reached—between 5,000 and 6,000; expectant mothers reached—approximately 4,500.

The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—23; counties in which maternity and infancy work was done during the year—23.

Except for the services of physicians from the bureau's staff, seven counties now carry on their own maternity and infancy work.

As a result of the bureau's work child-health conferences and dental conferences were conducted under local auspices in a number of counties.

The following organizations cooperated in the bureau's work: State federation of women's clubs, State league of women voters, service clubs, and parent-teacher associations. They assisted at conferences and in the survey of preschool children. Among the children examined at conferences reported in the foregoing paragraphs 3,379 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

Among the outstanding achievements of the year were the reductions in infant mortality and in maternal mortality.

## TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene was established in the State department of health in 1922. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on April 13, 1922.

The same physician has directed the work during the entire period of cooperation under the act. This has assured continuity of plans. Public-health nurses paid in part from maternity and infancy funds have been assigned to counties for maternity and infancy work, the number so detailed having increased from 3 in 1924 to 20 in 1928. A number of physicians and dentists have been employed by the day to assist in conference work (60 physicians and 8 dentists during 1928).

Cooperation has been maintained with fraternal and women's organizations, service clubs, and parent-teacher associations.

The bureau's work is in the counties outside Baltimore. An important feature of the program has been the distribution of literature on infant and maternal care. The Children's Bureau folder *Keeping the Well Baby Well* is sent to all mothers, additional literature is sent on the receipt of birth-report cards from registrars of vital statistics, and nearly all newly married

couples outside Baltimore are reached by the bureau's pamphlet on home making. Other major activities are home visits made by nurses, conferences conducted by physicians and dentists, and work done with midwives.

Silver nitrate for use in the prevention of ophthalmia neonatorum is distributed from the bureau to physicians and midwives.

Cooperation in the maternal-mortality study sponsored by the State medical society, which is being made in the State by the United States Children's Bureau, is a feature of work in the later period of cooperation with the Federal Government. Another more recent type of work is the development of conferences and centers conducted by negro physicians and nurses from the bureau's staff among the people of their own race.

The results of the program are reflected in the reduction in both maternal and infant mortality in 1927 compared with 1921 (the year before cooperation was begun), with greater reduction in rural than in urban areas.

The infant and maternal mortality rates for 1921 and 1927 for the State as a whole for the white and the colored population and for urban and rural areas were as follows:

*Infant mortality rates (deaths of infants under 1 year of age per 1,000 live births)*

	1921	1927
State.....	94	81
White.....	81	68
Colored.....	147	134
Urban.....	87	81
White.....	80	71
Colored.....	125	126
Rural.....	102	81
White.....	82	64
Colored.....	165	144

*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births)*

	1921	1927
State.....	66.5	57.5
White.....	59.5	53.9
Colored.....	96.1	71.9
Urban.....	69.7	73.5
White.....	65.6	71.3
Colored.....	92.6	82.8
Rural.....	62.5	36.5
White.....	51.0	30.1
Colored.....	98.8	59.2

The reduction in the infant mortality rate in the rural areas is noticeable among both the white and the colored population, the rate for the white infants being 22 per cent lower in 1927 than in 1921 and that for the colored infants 12.7 per cent lower.

The maternal mortality rates in the rural areas show even greater reduction. The rate for white mothers was 41 per cent lower in 1927 than in 1921; for colored mothers it was 40.1 per cent lower.

## MICHIGAN

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, bureau of child hygiene and public-health nursing, Lansing.

Funds expended: Federal, \$32,381.39; State, \$27,534.27; total, \$59,915.66.

#### Staff:

Director (physician), 2 physicians, 9 nurses, 2 vital-statistics clerks, 2 stenographers, 1 clerk, 1 mail clerk (part time).

#### Activities:

Child-health conferences conducted by physicians—22; infants and pre-school children registered and examined—683.

Defects found in children examined at conferences—1,525; children having defects—614.

Prenatal conferences conducted by physicians—11; expectant mothers registered—16; number examined—12; visits to conferences—114.

New permanent combined prenatal and child-health centers—6 established as a result of the maternity and infancy work. They are supported by local funds.

New permanent prenatal center—1 established as a result of the maternity and infancy work. It is supported by local funds.

Classes for girls in care of infants and preschool children—158 organized; girls enrolled and completing course—3,605; lessons in course—10. Public-health nurses not paid from maternity and infancy funds but receiving advisory assistance from the bureau organized 146 classes with an enrollment of 2,658 girls.

Classes for women—98 organized; women enrolled—1,300 (including 50 midwives); number completing course—1,080; lessons in course—6.

Self-directed study clubs—230 meetings; total attendance—4,595 women. The purpose of these clubs was to assist women to inform themselves in the fundamentals of prenatal, infant, and child care. The clubs were organized by a staff nurse, local organizations being used as a nucleus whenever possible. At the first meeting leaders were chosen for each of the six lessons, and a copy of the Michigan Mother's Manual was given to each member. Additional reference material was given to the leaders, and the method of preparing each lesson was discussed with them. Local physicians frequently led the discussions on prenatal and infant care, and local health officers discussed the control of communicable diseases. Demonstration material was lent by the bureau.

Home visits by nurses—5,005 (prenatal cases seen, 600; obstetrical cases, 3; postnatal cases, 150; infants, 2,641; preschool children, 355).

Community demonstrations—3, in 3 counties, of a prenatal nursing program (1 continued from the previous year was completed in December, 1927). Lists of expectant mothers were obtained from physicians and other interested persons. Calls were made on these women, and the hygiene of pregnancy was explained and the importance of regular medical supervision stressed. A complete history of each case was taken and immediately sent to the physician who was to attend the mother at confinement. Subsequent calls were made on an average of once a month or more often if any danger symptoms appeared, such symptoms being reported to the physician immediately. During the year under review 565 prospective mothers were under supervision, and 1,867 calls (1,226 prenatal, 641 postnatal) were made. The nurses continued their visits to the mothers until the infants were 6 weeks old. By the close of the year under review there had been 508 deliveries (including all deliveries in the counties in which work had been begun in the previous year), and only 1 of the mothers under supervision had died. Of the 477 babies

## Activities—Continued.

born alive to these mothers 345 were breast fed, 71 were partly breast fed. The proportion of breast-fed babies indicates the appreciation of advice on benefits of breast feeding given by the nurses.

Group demonstrations—453, of obstetrical kit, bed for home delivery, bottle feeding, and the baby's bath.

Survey—1, of maternal mortality, state-wide (continued from the previous year in cooperation with the United States Children's Bureau). The causes of death for the 819 cases studied by the close of the year under review were as follows:

Total	Number of deaths 819
Puerperal septicemia	359
Puerperal albuminuria and convulsions	167
Puerperal hemorrhage	95
Accidents of pregnancy	79
Accidents of labor	57
Embolus, sudden death, etc.	53
Causes following childbirth (not otherwise stated)	9

Campaigns—3: (1) For promotion of breast feeding, in 12 counties. Calls were made on the mothers of 1,671 babies, and advice was given as to the advantages of breast feeding. (2) For the examination of preschool children and correction of their defects before the children should enter school. As chairman of child hygiene for the State parent-teacher association the director of the bureau was able to stimulate local parent-teacher associations to register for this campaign, and 290 participated. Most of the examinations of children were made by local physicians. (3) For the observance of May Day as Child Health Day. The director served as chairman of this campaign.

Talks and lectures—257, to audiences totaling 10,964 persons.

Literature prepared—outlines for course of study for self-directed study clubs.

Literature distributed—359,047 pieces.

New names registered for prenatal letters—3,094; prenatal letters distributed—3,497 sets.

Nutrition work was done through talks given to classes for women and classes for girls.

Exhibits conducted—12, at fairs and meetings. Exhibit material prepared—charts on maternal mortality, layettes, obstetrical kits, method of giving sun baths. Exhibit material was lent thirty times.

Statistical study made—maternal-mortality data secured to July 1, 1928, in the survey reported in a foregoing paragraph.

Breast feeding was promoted by the breast-feeding campaign in 12 counties and by instruction given to mothers in conferences and classes.

Infants born in the State during the year—97,167; infants under 1 year of age reached by the work of the bureau—101,641; preschool children reached—1,038; expectant mothers reached—7,500 (exclusive of those reached by distribution of 59,590 pamphlets on prenatal care).

The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—83; counties in which maternity and infancy work was done during the year—79; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—83.

Since the beginning of the State's cooperation under the maternity and infancy act two counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

The bureau gave supervisory assistance to local organizations doing maternity and infancy work.

The following organizations cooperated in the bureau's work: State department of public instruction, State agricultural college (extension service), State grange, State league of women voters, State federation of women's clubs, State child-study association, State nurses' association, American Association of University Women, Woman's Christian Temperance Union, Daughters of the American Revolution, Legislative Council of Michigan

## Activities—Continued.

Women, Detroit Federation of Women's Clubs, women's fraternal organizations, and the parent-teacher association. Among the children examined at conferences reported in the foregoing paragraphs 200 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

The outstanding feature of the year's work was the maternal-mortality study, which was continued from the previous fiscal year and which has met with excellent cooperation from the physicians of the State.

## TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene and public-health nursing was established in the State department of health in 1920. The governor accepted the provisions of the maternity and infancy act on January 12, 1922. This was followed by legislative acceptance approved by the governor on May 24, 1923.

A physician has directed the work, with the aid of a central staff of physicians and nurses who have conducted various types of field activities. Assistance has been given by a State committee of heads of state-wide organizations of women who sponsor the program, meeting on the call of the director of the bureau and giving advice. County committees composed of representatives of the same organizations of women sponsor and aid the work in counties and communities.

The program has varied as the work has progressed. In the earlier years of cooperation with the Federal Government itinerant child-health conferences, itinerant prenatal conferences, organization of permanent health centers, a survey and supervision of midwives, and instruction in infant care for school girls in the upper grades were stressed. A survey of the incidence of goiter in four counties was followed by a state-wide campaign for its prevention which included special attention to the prevention of congenital goiter. In later years some of these activities have given place to demonstrations of prenatal nursing, county-wide breast-feeding surveys, and instruction of groups of women (including midwives) in prenatal care and the care of infants and children. A recent feature of the program still in progress is the study of maternal deaths.

The sending of literature on the care of the baby with a certificate of registration to the parents of all infants whose births are registered has put information on the early care of the baby in the hands of the parents promptly.

The effect of the program is reflected in lower infant mortality rates for the State in 1927 as compared with 1921, the year in which Congress passed the maternity and infancy act. The State's infant mortality rate for 1927 was the lowest since its admission to the United States birth-registration area in 1915. The infant and maternal mortality rates for 1921 and 1927 were as follows:

*Infant mortality rates (deaths of infants under 1 year of age per 1,000 live births)*

	1921	1927
State.....	79	68
Urban.....	81	70
Rural.....	75	64

*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births)*

	1921	1927
State.....	68.5	68.0
Urban.....	71.1	77.6
Rural.....	65.5	53.5

The markedly lower rural maternal mortality rate may be due in part to the fact that more rural mothers are employing physicians. Midwives reported 6,632 births in 1921, whereas in 1927 they reported 2,859 births.

## MINNESOTA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, division of child hygiene, Minneapolis.

Funds expended: Federal, \$32,339.92; State, \$21,099.65; total, \$53,439.57.

#### Staff:

Director (physician, part time), 1 physician (part year), 9 nurses, 1 vital-statistics field agent, 2 vital-statistics clerks, 4 stenographers, 1 mailing clerk, 2 general clerks (part time).

#### Activities:

Child-health conferences conducted by physicians—3; infants and preschool children registered and examined—35.

Defects found in children examined at conferences—76; children having defects—57.

The division issued certificates to 1,365 girls who were reported as completing the course in 34 classes in infant and child care conducted by local teachers and nurses, who used the Mothercraft Manual prepared by the division.

Courses for teachers on methods of teaching classes for girls in infant and child care were given at the State teachers' colleges. Classes organized—33; students registered—357; lessons in course—3 to 5.

Classes for mothers—42 organized; mothers enrolled plus those carried over from previous year—1,914; number completing course—515. Lessons in course—8. Additional classes were conducted by local public-health nurses not paid from maternity and infancy funds.

Home visits by nurses—758 (to prenatal cases, 34; obstetrical cases, 16; postnatal cases, 67; infants, 381; preschool children, 260).

Group demonstrations—5, of the material on maternal and infant care available from the division.

Survey—1, of maternal deaths in the State, 1927-28 (not completed).

Campaign—1, for the observance of May Day as Child Health Day.

Through the May Day activities clubs and other groups included discussions of this work in their programs and were responsible for distributing literature and acquainting their various communities with the State program of maternity and infancy work.

Talks and lectures—108.

Literature prepared—Sunlight and Cod-Liver Oil.

Literature distributed—270,112 pieces.

New names registered for prenatal letters—1,181; prenatal letters distributed—1,181 sets.

A correspondence course consisting of 15 lessons was conducted for mothers. During the year under review 897 women registered for the course, and 223 were on the roll from the previous year. The number completing the course was 689. More than 8,000 women have taken the course since it was begun about four years ago in cooperation with the State university.

A 4-lecture course in maternity and infancy work was given to a class of public-health nurses, 2 lectures were given to the senior hospital nurses in St. Paul and to those in Minneapolis, and a 12-lecture course in maternal and child hygiene was given to students in the State university. A lecture with exhibit of the division's material was given before the students of each class in the university medical college.

Exhibits conducted—49, at State and county fairs and at various meetings.

Exhibit material prepared—charts on maternal and infant mortality.

Exhibit material was lent 53 times.



## Activities—Continued.

Articles prepared—Sheppard-Towner Work in Minnesota, May Day—Child Health Day, Some Aspects of Preventable Deaths in Minnesota, Where Improvement Must Come in Our Infant Mortality Rate, Maternal Education in Minnesota, Work of the Child-Hygiene Division.

Statistical studies made—maternal mortality, 1910–1927, by causes; infant mortality, 1910–1926, by causes.

Counties in the State—87; counties in which maternity and infancy work was done during the year—72; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—87.

Since the beginning of the State's cooperation under the maternity and infancy act two counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

Public-health nurses throughout the State (including those not paid from maternity and infancy funds) refer prospective mothers to the division for prenatal letters or literature.

The following organizations cooperated in the division's work: State board of control, State department of education, State university (extension division), State league of women voters, State federation of women's clubs, American Red Cross, American Legion auxiliary, and parent-teacher associations.

The outstanding feature of the year's work was the development of the mothers' classes, which were conducted in various parts of the State and had far-reaching results in the education of mothers.

## TYPES OF WORK AND SOME RESULTS

The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on April 20, 1921. The division of child hygiene was established in the State department of health in 1922 to administer the funds that had been accepted.

The staff of the division since its establishment has included a medical director, several staff nurses, and occasional or part-time physicians.

Valuable cooperation has been given to the division by other official State agencies (the department of education, State board of control, and State university), the State medical association, women's organizations, the American Legion auxiliary, and the parent-teacher association.

The State program from the beginning of cooperation with the Federal Government has stressed education in infant and prenatal care through correspondence courses for mothers, prenatal letters, distribution of literature on maternal, infant, and child care, and lectures by physicians and nurses. Work with the Indians through Indian and other nurses detailed to the reservations has been a feature of the program. The detailing to counties of nurses paid in part from maternity and infancy funds has led to the assumption by two counties of the financial responsibility for maternity and infancy work.

The year ended June 30, 1928, has been marked by some changes in the program, including greater interest in surveys and instruction of groups. Classes for mothers conducted by the staff nurses have reached about 400 more mothers in 1928 than in 1927 with information on prenatal, infant, and child care. The state-wide survey of maternal mortality sponsored by the State medical society was in progress during 1928 (the data to be tabulated with the cooperation of the United States Children's Bureau), and a valuable statistical study of maternal mortality and infant mortality, by causes, was made. A breast-feeding survey in two counties showed that about 85 per cent of the babies were breast fed.

The infant mortality rate (deaths of infants under 1 year of age per 1,000 live births) for 1927 was 52, a new low rate for the State; the rate for 1926 was 58. The rate of 58 also obtained in 1922, the year in which the division of child hygiene was organized.

The maternal mortality rate also was lower in 1927 than in 1922. The rate of maternal deaths per 10,000 live births in 1922 was 49.5; in 1927 it was 44.1.

In the opinion of the State medical director the number of women using the educational material has definitely increased, and the interest will probably be maintained through nurses and physicians.

## MISSISSIPPI

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, bureau of child hygiene and public-health nursing, Jackson.

Funds expended: Federal, \$17,659.02; State, \$10,914.47; total, \$28,573.49.

#### Staff:

Director (State health officer serving part time), 2 nurses, 1 dental hygienist (part time), 1 midwife supervisor (part time), 1 vital-statistics clerk, 1 accountant (part time), 3 stenographers (2 part time). Nine county nurses in six counties were paid in full or in part from maternity and infancy funds.

#### Activities:

Child-health conferences conducted by physicians—254; infants and pre-school children registered and examined—4,344.

Defects found in children examined at conferences—4,459; children having defects—2,500. Parents were known to have had defects corrected in 371 of the children.

Prenatal conferences conducted by physicians—14; expectant mothers registered and examined—252; visits to conferences—444.

Dental conferences—161; preschool children receiving dental examination—3,338.

New permanent prenatal centers—4 established. They are supported by county funds.

Hygiene classes—160 organized in schools; pupils enrolled—4,000; number completing course and receiving certificates from the State board of health—3,627 (3,589 girls, 38 boys); lessons in course—12. Instruction in care and needs of infants and preschool children and in prenatal care was included in the course.

Work with midwives was done through midwives' clubs assisted by the county public-health nurses in counties having such service and by the headquarters staff in other counties. Each club has a leader and a secretary and holds a monthly meeting, a report of which is sent to the bureau. The nurses who conduct midwives' classes use an outline and a manual supplied by the bureau. On January 1, 1928, there were in the State 3,437 midwives (mostly colored) in active practice and 200 whose permits were pending.

Home visits by nurses—6,089 (to prenatal cases, 1,273; obstetrical cases, 280; infants, 2,014; preschool children, 2,522).

Talks and lectures—6,277.

Literature prepared—leaflets on sun baths, on breast feeding, and on motherhood.

Literature distributed—approximately 50,000 pieces.

Nutrition work was included in the activities of all nurses.

Exhibits conducted—in 81 counties, at meetings of midwives' clubs, at which posters on maternal and infant health were shown. In addition, motion pictures of all phases of the bureau's work were shown by the motion-picture truck in five counties.

Infants and preschool children reached through literature distributed—approximately 100,000; expectant mothers reached—1,171 (exclusive of those reached by literature distributed). Approximately 10,000 pieces of literature on prenatal care and motherhood were distributed.

The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—82; counties in which maternity and infancy work was done during the year—82.

Since the beginning of the State's cooperation under the maternity and infancy act eight counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

All the full-time county health departments in the State include maternity and infancy work in their programs.

## Activities—Continued.

The bureau rendered supervisory service to local health organizations doing maternal and infant-hygiene work.

The following organizations cooperated in the bureau's work: State league of women voters, State development board, fraternal organizations, and parent-teacher associations. They gave financial assistance and helped to stimulate local work.

An outstanding feature of the year's work was the organization of hygiene classes in the schools and the instruction given through these to the 4,000 pupils enrolled.

## TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene and public-health nursing was established in the State board of health in 1920. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on March 28, 1922.

A physician has directed the work during the entire period of cooperation with the Federal Government, assisted by a small staff including nurses, a dental hygienist, and clerical workers. Seven to nine nurses paid in full or in part from maternity and infancy funds have been detailed to county health departments to conduct maternity and infancy work under supervision of the State staff nurses.

The bureau has had the benefit of cooperation from the State development board, the American Red Cross, fraternal and women's organizations, and parent-teacher associations. The program was furthered by the adoption in 18 cities of the standard milk ordinance as promoted by the United States Government. This insured in these communities a better milk supply—which has a direct bearing on infant health.

Emphasis in the State work has been placed on hygiene classes organized in the public schools, in which instruction in the care of infants and preschool children was included. The fact that during the year under review 4,000 pupils enrolled for the course indicates a gratifying response to the opportunities offered.

Work with midwives has occupied a prominent place in the State program. A survey made in 1921 and 1922 showed that 4,209 were practicing in the State. These women all obtained permits to practice, and the State staff nurses have kept them under supervision and have given them instruction. Through a questionnaire sent to physicians it was found that the physicians have observed improvement in the midwives' cleanliness, in the number calling physicians in abnormal cases, in their care of mothers and infants, their equipment, reporting of births, and referring of cases for prenatal and postnatal examinations.

The infant mortality rate has remained practically stationary. Though there has been considerable fluctuation in the maternal death rate, this rate was lower in 1927 in both urban and rural areas than in 1921 (the year before the operation of the maternity and infancy act). The rates for the white and the colored mothers in the State as a whole and in rural areas likewise were lower in 1927 than in 1921. In the urban areas, however, though the rate for white mothers declined considerably, that for colored mothers was slightly higher in 1927 than in 1921. The maternal mortality rates for 1921 and 1927 in the State as a whole and in urban and rural areas were as follows for the white and the colored population:

*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births)*

	1921	1927
State.....	95.3	86.7
White.....	71.4	61.1
Colored.....	120.3	111.4
Urban.....	179.8	158.1
White.....	157.2	117.6
Colored.....	217.4	221.5
Rural.....	88.3	78.8
White.....	62.4	53.2
Colored.....	114.2	102.4

## MISSOURI

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, division of child hygiene, Jefferson City.

Funds expended: Federal, \$21,000; State, \$21,000; total, \$42,000.

#### Staff:

Director (physician), 1 physician (part year), 3 nurses (2 part year), 1 stenographer (part year), 1 birth-registration investigator (part year, part time), 1 multigraph operator (part time). Fourteen county nurses were paid in part from maternity and infancy funds.

Volunteer assistants—147 county and city health officers, 29 nurses, approximately 150 lay persons.

#### Activities:

Child-health conferences conducted by physicians—484; infants and preschool children registered and examined—7,979; visits to conferences—9,718.

Defects found in children examined at conferences—11,240; children having defects—4,493. Parents were known to have had defects corrected in 15 per cent of the children.

Conferences conducted by nurses, no physician present—840; children inspected—16,221; mothers instructed in prenatal care—778; visits to conferences by children—32,442; visits by mothers—1,334.

New permanent child-health centers—4 established as a result of the maternity and infancy work. They are supported by maternity and infancy funds and by local public and private funds.

Classes for girls in care of infants and preschool children—42 organized; girls enrolled—488; number receiving certificates—84; lessons in course—12. To be entitled to a certificate a girl must attend at least 10 classes and must pass an examination covering the entire course.

Classes for mothers—337 organized; mothers enrolled plus those carried over from previous year—8,020; number completing course—3,370; lessons in course—usually 10.

Home visits by nurses—5,442 (prenatal cases seen, 595; obstetrical cases, 25; postnatal cases, 204; infants and preschool children, 3,794).

Community demonstrations—44, consisting of conferences for preschool children, health talks, exhibits, and group demonstrations. The program usually lasted a week or longer. Special children's cases were discussed in conferences with local physicians at the close of the demonstrations.

Group demonstrations—958, of sun suits, homemade beds for babies, the baby's bath, and other items of infant care, at child-health conferences and classes for mothers.

Campaign—1, to have preschool children qualify as "6-pointers" and "9-pointers." To qualify as "6-pointers" the children had to be free from defects in vision, hearing, throat, teeth, posture, and weight. To qualify as "9-pointers" the children also had to have their births registered, be immunized against diphtheria, and be vaccinated against smallpox. Forty-six counties used this plan for interesting parents in having their children examined and any defects corrected before the children should enter school. A total of 13,134 6-point awards and 16,564 9-point badges were issued by the division during the year under review.

Talks and lectures—606.

Literature prepared—Health Habits of Preschool Children, County Public Health Nursing, Sun Baths.

Literature distributed—780,450 pieces.

New names registered for prenatal letters—925; prenatal letters distributed—712 sets.

## Activities—Continued.

Exhibits conducted—9, at fairs and meetings. Exhibit material prepared—graphs on infant death rate and diphtheria decline, map showing progress of campaign for "6-point" children. Exhibit material was lent twenty-five times.

Scientific article prepared—Prevention of Blindness.

Statistical study made—infant mortality, in 1 county.

Breast feeding was stressed at all child-health conferences and in a lecture given at the annual State public-health meeting. Of the 3,594 infants examined, 1,920 (approximately 53 per cent of the total number examined) were breast fed at least 6 months.

Infants born in the State during the year—66,401; infants under 1 year of age reached by the work of the division—43,195; preschool children reached—26,994; expectant mothers reached—2,298 (exclusive of those reached through literature distributed).

The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics (except those born in the three largest cities in the State).

Counties in the State—114; counties in which maternity and infancy work was done during the year—53; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—112.

As a result of the division's work three new community nursing services were started.

The following organizations cooperated in the division's work; State federation of women's clubs, State league of women voters, State tuberculosis society, State agricultural college (extension division), Woman's Christian Temperance Union, and the parent-teacher association. They assisted with publicity in the campaign for 6-point and 9-point children and in advocating full-time county nurses. About 20 per cent of the children examined at health conferences were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

Among the outstanding achievements of the year were the results accomplished by campaigns for 6-point and 9-point children and the admission of the State to the United States birth-registration area.

## TYPES OF WORK AND SOME RESULTS

The division of child hygiene was established in the State board of health in 1919. The governor accepted the provisions of the maternity and infancy act on January 17, 1922. This was followed by legislative acceptance approved by the governor on March 24, 1923.

A relatively small central staff of physicians and nurses direct and supervise the field activities and conduct child-health conferences. Fourteen nurses paid in part from maternity and infancy funds were detailed to counties during 1927 and 1928.

The number of full-time county health units has increased as a result of rehabilitation of the areas flooded by the Mississippi River, and the nurses paid in part from maternity and infancy funds have worked especially in the counties having such units.

Cooperation of county and city health officers and public-health nurses not paid from maternity and infancy funds has permitted extension of the work and has increased its efficiency. Cooperation has also been given by the State department of education and State educational institutions, the American Red Cross, State medical, dental, tuberculosis, public-health, and nurses' associations, State conference of social work, State street and highway safety council, women's organizations, and the parent-teacher association.

One of the objectives of the State program which has been attained was the admission of the State to the United States birth-registration area. Another objective has been the reaching of all parents in the State with information on infant care. This is accomplished by sending literature on infant hygiene to parents of all infants whose births are registered (with the exception of those born in the cities of St. Louis, Kansas City, and St. Joseph).

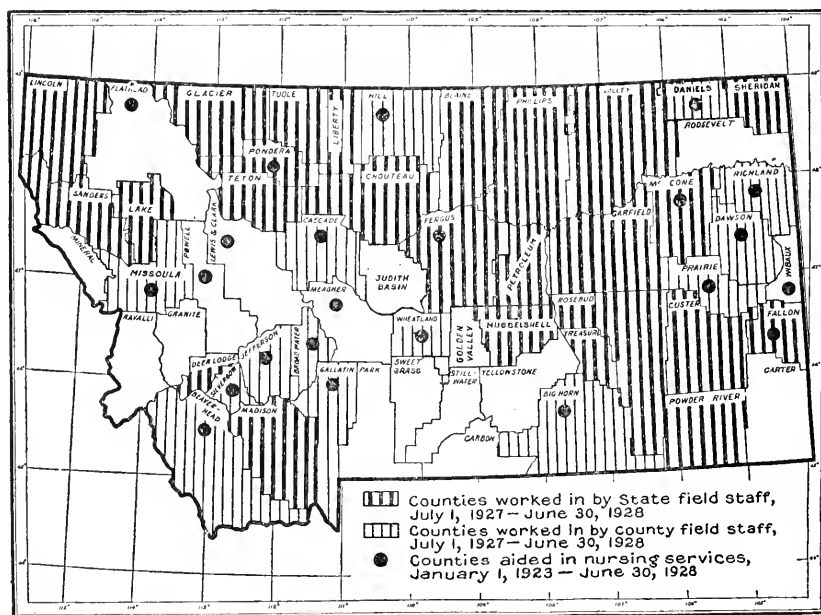
An extension of the effort to have all preschool children qualify as "6-pointers" and "9-pointers" has marked the work during 1928. The reporting of 9,900 6-point children to the State board of health in 1927, and the awards in 1928 to 13,134 6-point children and the issuance of 9-point badges to 16,564

children indicate the success of the 6-point and 9-point work. The percentage of defects corrected in the 46 counties using this plan for stimulating the correction of physical defects was more than twice that in the other counties in 1928.

Extension of other features of the work has marked the fiscal year 1928. For example, classes for mothers increased in numbers, also the number of mothers taking the courses. The number of counties having maternity and infancy work during the year increased.

Maternity and infancy funds were used in July, 1926, for the purchase of material for preparing nitrate of silver ampules; the expense of manufacture and distribution has been paid from other State funds. These ampules are distributed free to physicians on request, and 10,063 ampules were distributed during 1928. Thirty-one cases of ophthalmia neonatorum were reported during 1925, but only 25 during 1927.

Mortality rates are available for the State from the United States Bureau of the Census for 1927, the year of the State's admission to the registration area. The infant mortality for that year was 60 per 1,000 live births, and the maternal mortality was 67.4 per 10,000 live births.



Counties receiving aid for nursing services and distribution of maternity and infancy work, by counties, Montana

## MONTANA

### STAFF AND ACTIVITIES IN 1923

#### Administrative agency:

State board of health, child-welfare division, Helena.

Funds expended: Federal, \$12,568.36; State, \$8,700; total, \$21,268.36.

#### Staff:

Director (physician), 3 nurses (part time, 2 part year), 1 vital-statistics clerk, 1 bookkeeper (part time), 1 stenographer. Physicians were employed as needed to conduct conferences. Eleven county nurses were paid in part from maternity and infancy funds.

#### Activities:

Child-health conferences conducted by physicians—158; infants and preschool children registered and examined—1,724.

Children having defects—1,318. Parents had defects corrected in 216 of the children (report incomplete).

Conferences conducted by nurses, no physician present—328; children inspected—2,799; mothers instructed in prenatal care—135; visits to conferences by children—3,183.

New permanent combined prenatal and child-health center—1 established as a result of the maternity and infancy work. It is supported by maternity and infancy funds and by private funds.

New permanent child-health centers—3 established as a result of the maternity and infancy work. They are supported by maternity and infancy funds and by a private organization.

Classes for girls in care of infants and preschool children—6 organized; girls enrolled—118; lessons in course—12.

Home visits by nurses—3,913 (prenatal cases seen, 213; obstetrical cases, 4; postnatal cases, 46; infants, 1,905; preschool children, 2,092).

Group demonstrations—95.

Talks and lectures—1,124.

Literature distributed—211,116 pieces.

New names registered for prenatal letters—774; prenatal letters distributed—774 sets.

Nutrition work was done through individual instruction.

Exhibits conducted—70, at conferences and fairs. Exhibit material was lent four times. Motion-picture films were lent one hundred and seventy-nine times.

Assistance was given to the State bureau of vital statistics in making a complete study of the vital statistics of the State.

Infants born in the State during the year—9,905; infants under 1 year of age reached by the work of the division—3,226; preschool children reached—6,665; expectant mothers reached—1,122. (These figures do not include children and expectant mothers reached by literature distributed.)

The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—56; counties in which maternity and infancy work was done during the year—39; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—56.

Since the beginning of the State's cooperation under the maternity and infancy act two counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

As a result of the division's work child-health conferences were conducted weekly in one county by local workers, eight classes for girls in care of infants and preschool children with an enrollment of 112 girls were organized by nurses not paid from maternity and infancy

## Activities—Continued.

funds, and the tuberculosis nurse on the Blackfeet Indian Reservation carried on an extensive child-hygiene program.

The division gave some supervision to the work of public-health nurses employed by the State tuberculosis association and other organizations.

The following organizations cooperated in the division's work: State tuberculosis association, State federation of women's clubs, American Red Cross, and the parent-teacher association. Among the children examined at conferences reported in the foregoing paragraphs 167 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

An outstanding feature of the year's work was the promotion of county public health nursing services.

## TYPES OF WORK AND SOME RESULTS

The child-welfare division was established in the State board of health in 1917. The governor accepted the provisions of the maternity and infancy act on February 9, 1922. This was followed by legislative acceptance approved by the governor on March 16, 1923.

A physician has directed the work of the division, and two to three nurses on the division's staff have done field work. Local physicians have been employed to conduct conferences, and nurses paid in part from maternity and infancy funds (11 in 1928) have been detailed to counties.

Cooperation has been maintained with the American Red Cross, the State tuberculosis association, women's organizations, and the parent-teacher association.

The program has been characterized by child-health conferences conducted by physicians and nurses. Promotion of nursing services through assistance in financing county nurses has provided a medium of education in infant and prenatal care. The sending of literature on infant care to mothers of infants whose births are registered has been a means of carrying to remote districts valuable assistance in providing intelligent care for young babies.

Through the use of maternity and infancy funds ampules of nitrate of silver are distributed free for the use of physicians and midwives in preventing ophthalmia neonatorum.

Both infant and maternal mortality rates were lower for 1927 than they were for 1922, the year in which the State began cooperation with the Federal Government under the provisions of the maternity and infancy act. The infant mortality rate in 1927 was the lowest since the State was admitted to the United States birth-registration area. The number of infants dying in their first year of life was 70 for every 1,000 born alive in 1922, whereas it was 66 in 1927. The maternal mortality rate per 10,000 live births was 79.1 in 1922, but it was 66.3 in 1927. This was a saving of 13 mothers for every 10,000 live births in the State in 1927 as compared with 1922. The saving in the lives of rural mothers was even greater; 23 rural mothers who would have died at the rate prevailing in 1922 survived for every 10,000 live births in 1927.

For map showing the counties receiving aid for nursing services and the distribution of maternity and infancy work, by counties, see page 92.



## NEBRASKA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of public welfare, bureau of health, division of child hygiene, Lincoln.

Funds expended: Federal, \$11,000; State, \$6,000; total, \$17,000.

#### Staff:

Director (nurse), 3 nurses (1 part year), 1 inspector of maternity and infant homes (part time), 1 vital-statistics clerk, 1 stenographer.

Volunteer assistants—120 physicians, 94 dentists, 20 nurses, 392 lay persons.

#### Activities:

Child-health conferences—100 (90 conducted by physicians who volunteered their services, 10 conducted by a physician lent to the State by the United States Children's Bureau); infants and preschool children registered and examined—3,465; visits to conferences—3,475.

Defects found in children examined at conferences—8,830; children having defects—2,900.

Classes for girls in care of infants and preschool children—18 organized; girls enrolled—446; lessons in course—4. Most of these classes were conducted in high schools in which the home-economics instructor arranged for the course to be given. One class was conducted at an Indian school which had an enrollment representing many tribes.

Classes for mothers—37 organized; mothers enrolled—between 600 and 700; number completing course—164; lessons in course—4.

Home visits by nurses—1,932 (prenatal cases seen, 119; postnatal cases, 9; infants, 933; preschool children, 871).

Maternity homes inspected—96; inspections made—96.

Infant homes inspected—13; inspections made—13.

Group demonstrations—264, of bathing the baby, applying bandages, preparing maternity bed, preparing tent for croup and diphtheria cases, and various other phases of maternal and child care.

The division is cooperating in a study of maternal mortality being conducted in the State by the United States Children's Bureau with the indorsement of the State medical society.

Campaign—1, in cooperation with the State parent-teacher association, for examination of preschool children and correction of their defects before the children should enter school in the fall. In connection with the observance of May Day as Child Health Day the division prepared and distributed literature to help in stimulating and planning local programs.

Talks and lectures—42.

Literature prepared—The Optimal Child (folder).

Literature distributed—85,055 pieces. A mimeographed summary of the State vital statistics was sent to all practicing physicians with a letter telling them of the literature available from the division. In response many requests for bulletins were received, also names of expectant mothers to whom literature was to be sent. Copies of Standards of Prenatal Care<sup>5</sup> were furnished to two medical schools, and sets of child-hygiene bulletins were furnished to the senior nurses in all nurses' training schools.

New names registered for prenatal letters—691; prenatal letters distributed—711 sets.

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<sup>5</sup> Standards of Prenatal Care; an outline for the use of physicians. U. S. Children's Bureau Publication No. 153. Washington, 1925.

## Activities—Continued.

Nutrition work was done through individual instruction at health conferences and in home visits. Instruction in nutrition was included in the classes for mothers and for girls.

Exhibit material prepared—photographs and posters. Two attractive booklets were made showing health literature for parents that could be obtained from the division. These, with mimeographed lists of the available publications, were placed in two large stores dealing in infant clothing. A number of requests for literature were received from expectant mothers as a result of this exhibit. Exhibit material was lent six times.

Breast feeding was stressed in class and individual instruction to mothers and in literature distributed.

Infants born in the State during the calendar year 1927—27,866; infants under 1 year of age reached by the work of the division during the year ended June 30, 1928—10,722; preschool children reached—10,117; expectant mothers reached—819.

The division sends reply post cards, which may be used in requesting copies of literature on child care, to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—93; counties in which maternity and infancy work was done during the year—82; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—90.

As a result of the maternity and infancy work bimonthly child-health conferences have been inaugurated in two towns in one county.

The division supervised child-health conferences and classes conducted by local organizations.

The following organizations cooperated in the division's work: State university (extension service), State medical association, State league of women voters, federated and rural women's clubs, American Legion auxiliary, American Red Cross, State and local Woman's Christian Temperance Unions, county medical societies, county fair boards, church societies, mothers' clubs, a fraternal organization, the State parent-teacher association, and local parent-teacher associations. These organizations sponsored child-health conferences and classes for mothers and for girls. Among the children examined at conferences reported in the foregoing paragraphs 2,117 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers. Excellent cooperation was also given by the State superintendent of public instruction, county and town superintendents of schools, instructors in home economics, and county public-health nurses. The director of the child-hygiene division was appointed State chairman of public health for the State federation of women's clubs. This gave unusual opportunity to make contacts with the women's clubs and has increased their interest in community-health activities.

An outstanding feature of the year's work was the increase in class work for women and for high-school girls.

## TYPES OF WORK AND SOME RESULTS

A division of child hygiene was established in 1921 in the bureau of health of the State department of public welfare. The governor accepted the provisions of the maternity and infancy act on February 8, 1922. This was followed by legislative acceptance approved by the governor on April 11, 1923.

Changes in plans have occurred as a result of changing directors. Since July, 1925, a nurse has been in charge of the work. During the early years of cooperation emphasis was placed on work with the Indians, a full-time worker being detailed to the reservations. During the later years work has continued with the Indians, but it has been done through the work of the three staff nurses. The social worker on the staff has served as inspector of maternity and infant homes.

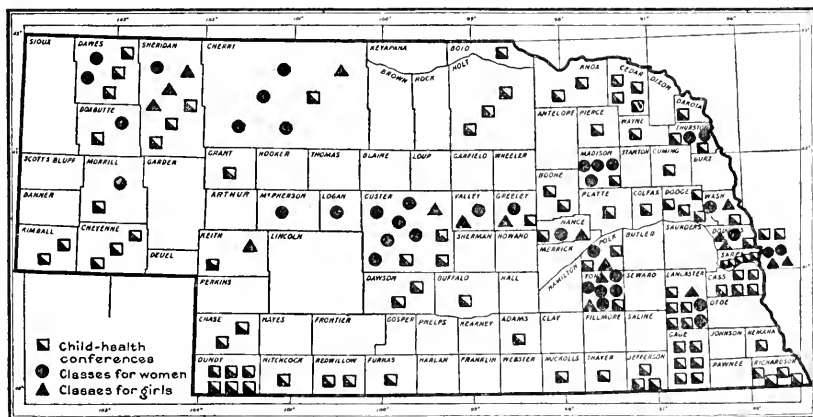
The division has had the benefit of cooperation from the American Red Cross, State and county medical associations, and the State tuberculosis association, women's organizations, and the parent-teacher association; also county,

school, church, fraternal, and other organizations. Cooperation and special volunteer assistance in the program have been given by a large number of physicians, dentists, nurses, and lay persons.

Child-health conferences, particularly for the preschool child, have been marked features of the more recent work, with increasing numbers of conferences held and of infants and preschool children examined. More classes for girls in infant care and for women in infant and maternal care have been organized, efforts having been made also to reach the more isolated communities with class instruction as well as through the nurses' visits to homes. Not only has the work expanded geographically, but more mothers and infants are being reached each year.

The division's cooperation in the study of maternal mortality, which is sponsored by the State medical association and is being made in the State by the United States Children's Bureau, will lay a foundation for future work looking toward the further reduction of maternal mortality.

The State has shown relatively low infant and maternal mortality rates since it was admitted to the United States birth-registration area in 1920. But



Distribution of child-health conferences and classes for women and girls; Nebraska, 1927-28

a new low infant mortality rate marked the year 1927, when 51 infants under 1 year of age died in every 1,000 born alive.

Maternal mortality rates have fluctuated from year to year. The rate for the State as a whole has not declined since 1922, but this is due to the fact that the urban maternal death rate rose while the rural rates were practically the same in 1922 and 1927.

The infant and maternal mortality rates for the State as a whole and for urban and rural areas in 1922 (the year in which cooperation with the Federal Government was begun) and 1927 were as follows:

*Infant mortality rates (deaths of infants under 1 year of age per 1,000 live births)*

	1922	1927
State.....	57	51
Urban.....	71	60
Rural.....	53	48

*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births)*

	1922	1927
State.....	58.0	59.2
Urban.....	89.9	91.5
Rural.....	49.1	48.8

## NEVADA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, child-welfare division, Reno.

Funds expended: Federal, \$8,845.26; State, \$5,299.38; total, \$14,144.64.

#### Staff:

Director. Five county nurses were paid from maternity and infancy funds for approximately two-thirds of their time.

#### Activities:

Combined prenatal and child-health conferences conducted by a physician lent to the division by the United States Children's Bureau—4; expectant mothers registered and examined—2; infants and preschool children registered and examined—36.

Child-health conferences conducted by a physician lent to the State by the United States Children's Bureau—10; infants and preschool children registered and examined—203.

Conferences conducted by nurses, no physician present—103; children inspected—493; mothers instructed in prenatal care—53.

Classes for girls in care of infants and preschool children—14 organized; girls enrolled—166.

Classes for mothers—10 organized; mothers enrolled—142.

Home visits by nurses—3,893 (prenatal cases seen, 81; obstetrical case, 1; postnatal cases, 12; infants, 231; preschool children, 249).

Group demonstrations—86, of various phases of maternal and infant care.

Literature distributed—2,380 pieces.

Prenatal letters distributed—184 sets.

Infants under 1 year of age reached by the work of the division—380; preschool children reached—304; expectant mothers reached—approximately 200.

Counties in the State—17; counties in which maternity and infancy work was done during the year—17.

Since the beginning of the State's cooperation under the maternity and infancy act two counties have assumed part of the responsibility for maternity and infancy work begun with maternity and infancy funds.

The Nevada Public Health Association cooperated in the division's work, contributing \$25 per month to the salary of each nurse employed by the division.

### TYPES OF WORK AND SOME RESULTS

The child-welfare division was established in the State board of health in 1922. The governor accepted the provisions of the maternity and infancy act on May 12, 1922. This was followed by legislative acceptance approved by the governor on March 2, 1923.

The same director has had charge of the work since the beginning of cooperation under the act. The State is divided into five nursing districts, and to each district is assigned a nurse, two-thirds of whose salary is paid from maternity and infancy funds. The financial cooperation of the Nevada Public Health Association has been of great help in the expansion of the work.

The State program has been marked by instructive visits of nurses to homes of mothers and infants and by conferences for children held by nurses, in which children were inspected by the nurses and information and literature were given to the mothers. Instruction in infant and prenatal care for classes of mothers and in infant care for classes of girls has been continued as in previous years.

The chief result of the work has been the interest developed in the welfare and hygiene of mothers and children and the responsibility assumed by communities for work begun with maternity and infancy funds.

As the State is not in the birth-registration area no statement as to mortality rates can be made. Legislation is necessary to provide suitable registration districts for registering births and deaths.

## NEW HAMPSHIRE

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, division of maternity, infancy, and child hygiene, Concord.

Funds expended: Federal, \$12,471.76; State, \$7,988.31; total, \$20,460.07.

#### Staff:

Director (nurse, not paid from maternity and infancy funds), 6 nurses (part year), 2 stenographers. Physicians were employed as needed to conduct conferences.

#### Activities:

Child-health conferences conducted by physicians—104; infants and preschool children registered and examined—3,384; visits to conferences—3,388.

Defects found in children examined at conferences—2,448; children having defects—1,772. Parents had defects corrected in 714 of the children, and 797 children were under treatment at the close of the year under review.

Dental conference—1, conducted by a dentist who volunteered his services; preschool children receiving dental examination—12.

New permanent combined prenatal and child-health centers—2 established as a result of the maternity and infancy work. They are supported by private funds.

New permanent child-health center—1 established as a result of the maternity and infancy work. It is supported by a local club.

Classes for girls in care of infants and preschool children—20 organized; girls enrolled and completing course—250; lessons in course—1 to 6.

Classes for mothers—15 organized; mothers enrolled and completing course—260; lessons in course—6.

Home visits by nurses—11,871 (prenatal cases seen, 308; obstetrical cases, 10; postnatal cases, 229; infants, 2,284; preschool children, 6,607).

Maternity homes inspected—26; inspections made—26.

Infant homes inspected—44; inspections made—49.

Group demonstrations—312, of correct posture, preparation of food, maternity packages, and other items of maternity, infant, and child care, at conferences and classes. Demonstrations to individuals in homes and at conferences—822.

Survey—1, of breast feeding in rural sections of the State, which showed the following results: Infants breast fed at birth—57 per cent; breast fed at 1 month—43.5 per cent; breast fed at 3 months—24.8 per cent; breast fed at 6 months—15.1 per cent.

Campaign—1, for immunization against diphtheria (continued from previous year) in 13 towns. Approximately 2,500 children were immunized by the State epidemiologist and local physicians, the immunization treatment to be followed within a year by the Schick test.

Talks and lectures—416.

Literature prepared—Home Making, Posture, Care of Child from 2 to 6 Years of Age, prenatal letters, diet cards, list of publications.

Literature distributed—182,214 pieces.

New names registered for prenatal letters—540; prenatal letters distributed (during six months)—1,451 sets.

Nutrition work was done through individual instruction at conferences and in home visits and through some class work.

Exhibits conducted—200, at conferences, fairs, and meetings. Exhibit material prepared—posters, proper clothing for preschool children and expectant mothers, suitable toys for young children. Exhibit material was lent one hundred and ten times.

## Activities—Continued.

Breast feeding was promoted by the breast-feeding survey, individual work with mothers and physicians, and literature sent to the parents of all infants whose births were registered.

Infants born in the State during the year—8,772; infants under 1 year of age reached by the work of the division—8,772; preschool children reached—7,067; expectant mothers reached—2,500.

The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—10; counties in which maternity and infancy work was done during the year—10.

In every town in which conferences or classes were conducted a permanent community child-health committee consisting of health officers, physicians, nurses, school superintendents, clergymen, and representatives of clubs was organized.

The following organizations cooperated in the division's work: State university (extension service), State tuberculosis association, State federation of women's clubs, State league of women voters, State farm bureau, American Legion auxiliary, American Red Cross, and the parent-teacher association. They assisted by sponsoring the health activities, furnishing rooms for conferences and assisting at them, conducting exhibits, and doing follow-up work.

Among the outstanding features of the year's work were the expansion of the prenatal work, in that distribution of prenatal letters was added to the activities already carried on, and the educational work in preparation for parenthood by means of the classes for girls.

## TYPES OF WORK AND SOME RESULTS

The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on April 14, 1921. The division of maternity, infancy, and child hygiene was established in the State board of health in 1922.

A public-health nurse has served as director of the division. Additional nurses have served on the State staff, and physicians have been employed as needed to conduct conferences. The majority of the State staff nurses have received training at the Maternity Center Association in New York City. Organization of the State into five nursing districts with a staff nurse assigned to each district gives an all-year nursing service to every section of the State. Through the work of these nurses and that of permanent community child-health committees organized in the towns education in maternal and infant welfare has been greatly promoted.

Excellent cooperation in carrying out the State program has been given by groups and individuals in addition to the community committees. Club women have sponsored health activities; parent-teacher associations have assisted in the work with preschool children and in organizing self-directed study groups; State tuberculosis nurses, Red Cross nurses, and other public-health nurses in the State have helped at conferences and in follow-up work; and farm-bureau agents have assisted with exhibits and given talks on nutrition. Local officials of cities and towns have cooperated by furnishing rooms and buildings for conferences and aiding in the transportation of children to and from conferences. One group of town officials appropriates \$100 each year for follow-up work to secure correction of defects. Both public and private social agencies have rendered assistance to the program in various ways.

The physicians of the State have given of their time and effort freely. The president of the State medical society in connection with plans for a study of maternal mortality recently issued a letter to the physicians of the State saying: "As president of the New Hampshire Medical Society I wish to call your attention to the very important effort which is being made to reduce the maternal and infant mortality in our State. Much good work has already been accomplished through our State board of health in helping to educate the public concerning prenatal and maternal care."

During 1928 emphasis was placed on maternity work, on sending prenatal letters to expectant mothers, and on urging the mothers to have prenatal care. Expectant mothers were advised to nurse their babies, and promotion of breast feeding was a prominent feature of the year's program.

Work for prevention of diphtheria was continued, with the immunization of approximately 2,500 children, about the same number as in the previous year. Class work was likewise continued, also the sending of literature on the care of the baby to parents of infants whose births are registered.

The infant mortality rate for 1921, the year of acceptance of the provisions of the maternity and infancy act, was 87 infants under 1 year of age dying in every 1,000 born alive. In 1927 the rate had declined to 69, the lowest rate in the history of the State, which meant a saving of 18 babies in every 1,000 born alive as compared with 1921, the year before the State began cooperation with the Federal Government.

The infant mortality rates from 1921 to 1927 were as follows: 1921, 87; 1922, 80; 1923, 93; 1924, 80; 1925, 76; 1926, 79; 1927, 69.

The maternal mortality rate has fluctuated from year to year. In 1927 it was 64.8 per 10,000 live births, an improvement over the rate of the preceding year (75.7).

## NEW JERSEY

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, bureau of child hygiene, Trenton.

Funds expended: Federal, \$27,000; State, \$26,284.55; total, \$53,284.55.

#### Staff:

The Federal and State maternity and infancy funds constituted less than half the bureau's budget during the year under review, so that the staff was paid from maternity and infancy funds for only a part of the year. All the following staff were paid from maternity and infancy funds for some portion of the year: 33 nurses (3 serving as assistant supervisors, 9 serving as instructors and supervisors of midwives and inspectors of maternity and infant homes), 1 publicity clerk, 1 vital-statistics clerk, 2 stenographers, 1 clerk. The director (physician, part time) was not paid from maternity and infancy funds.

#### Activities:

Child-health conferences conducted by physicians who volunteered their services—1,760; infants and preschool children registered and examined—10,894; visits to conferences—29,472.

Defects found in children examined at conferences—9,610; children having defects—2,466. Parents had defects corrected in 1,835 of the children.

Prenatal conferences conducted by physicians—62; expectant mothers registered and examined—129; visits to conferences—401.

Conferences conducted by nurses, no physician present—439; children inspected—2,634; visits to conferences—10,536.

New permanent child-health centers—12 established, partly as a result of the maternity and infancy work. They are supported by maternity and infancy funds and by State funds.

New permanent prenatal centers—3 established, partly as a result of the maternity and infancy work. They are supported by maternity and infancy funds and by State funds.

Classes for girls in care of infants and preschool children—46 organized; girls enrolled—632; number completing course—420; lessons in course—10. The State department of health issued certificates to the girls who completed the course. Classes were also conducted for the girls in continuation schools in three districts of the State.

Courses in child hygiene were given in the five State normal schools, both in the regular term and in the summer schools.

A course of 12 lessons and demonstrations was given at the State reformatory for women. The essentials of prenatal care and the care of the baby were taught.

Class for mothers—1 organized; mothers enrolled and completing course—15; lessons in course—6.

The 9 midwives' organizations in the State held monthly meetings, at which a course of lectures was given by physicians. All puerperal deaths in cases that a midwife had attended at any time were investigated. An advanced course for licensed midwives was arranged in cooperation with the Jersey City Hospital to provide practical training in the hospital's maternity wards, nursery, labor and delivery rooms, and classrooms, one week being spent in each department. During the year under review 14 midwives completed the course.

Home visits by nurses—97,961 (prenatal cases seen, 2,202; infants, 14,101; preschool children, 7,585; visits to midwives—2,403).

Maternity homes inspected—32; inspections made—155. All maternal and infant deaths and stillbirths occurring in the homes were investigated.

Infant homes inspected—250; inspections made—928.



**Activities—Continued.**

**Community demonstrations**—3, to show the value of prenatal care; 2 were in cities, 1 in a rural county; 151 prenatal cases were under supervision in 1 of the city demonstrations, 69 in the other. Figures were not reported for the demonstration in the rural county.

**Group demonstrations**—10, of the value of infant and preschool-child care in preventing physical defects in later life. These were conducted before health officers, parent-teacher associations, federated women's clubs, and other groups.

**Survey**—1, in 3 counties, to determine the need of child-hygiene nurses and the districts in which to place them.

In connection with the observance of May Day as Child Health Day a special effort was made to have children immunized against diphtheria. Preschool conferences were arranged in 35 communities, and 7,039 preschool children were immunized.

**Talks and lectures**—2,641.

**Literature distributed**—approximately 65,000 pieces.

**Nutrition classes**—4 conducted. The extension service of the State agricultural college cooperated by giving lectures on nutrition.

**Exhibits conducted**—17, at State and county fairs, farmers' picnics, and various meetings.

**Exhibit material prepared**—charts showing neonatal, infant, and maternal mortality rates and various child-hygiene activities.

**Statistical studies made**—neonatal mortality, maternal mortality.

**Breast feeding** was stressed in the instruction given to mothers in home visits.

**Infants born in the State during the year**—72,799; infants under 1 year of age reached by the work of the bureau—19,341 (exclusive of those reached by literature distributed); preschool children reached—15,446 (exclusive of those reached by literature distributed); expectant mothers reached—4,675.

**Counties in the State**—21; counties in which maternity and infancy work was done during the year—21.

At the close of the year under review child-hygiene nurses in 325 communities were being paid from local funds.

In most of the school districts in the State in which there were child-hygiene nurses special conferences for children who would enter school in the fall were held during the spring months. The school medical inspector made examinations, and the nurses did follow-up work during the summer to encourage parents to have corrections made before the children should enter school.

The following organizations cooperated in the bureau's work: State agricultural college (extension service), State league of women voters, federated women's clubs, National Council of Jewish Women, several fraternal organizations, and the parent-teacher association. Among the children examined at child-health conferences reported in the foregoing paragraphs 2,084 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

Among the outstanding achievements of the year were the development of the prenatal demonstration begun in the previous year and the beginning of three others (one not financed from maternity and infancy funds), the inauguration of the graduate course for midwives, and the extension of child-hygiene work to 40 additional communities.

#### TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene was established in the State department of health in 1915. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on March 17, 1922. During the entire period of cooperation with the Federal Government the State appropriation has been more than twice the amount of the Federal funds.

The same medical director has been in charge of the work of the bureau throughout the period of cooperation. The staff has included nurses who have served as county nurses, supervisors of midwives, instructors in infant and prenatal care, and inspectors of maternity and infant homes.

The bureau has had the benefit of cooperation from the State department of institutions and agencies and the State agricultural college, the State tuber-

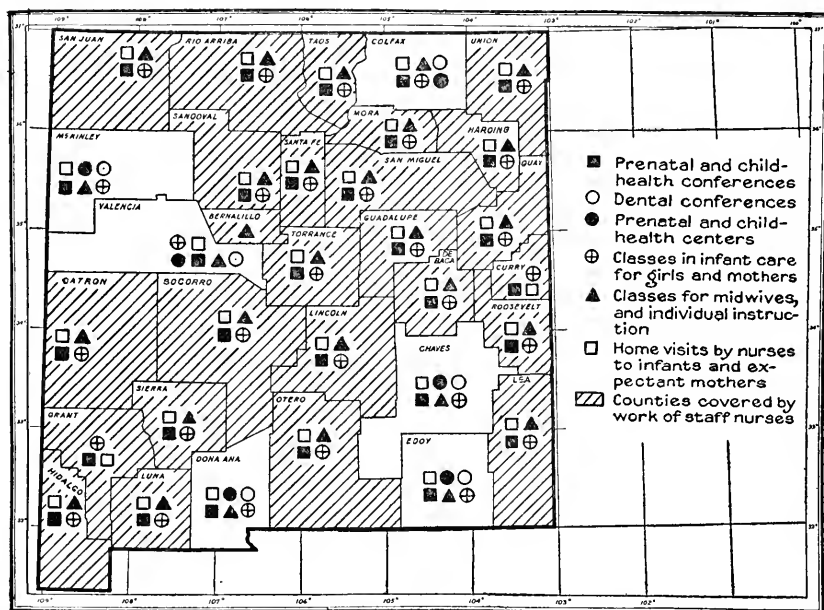
culosis association, several social-service, church, and fraternal organizations, women's organizations, and the parent-teacher association.

The program has included visits to homes by nurses, child-health conferences at child-health centers, efforts to increase the number of child-health centers, expansion of community child-health work, attention to improving the practice of midwives, inspection of infant and maternity homes, a demonstration in prenatal care, and special instruction in prenatal and child care to the women in the State reformatory.

Notable among the achievements has been the increase in the number of child-welfare centers, the extension of child-health work to new communities, the increase in the number of public-health nurses employed in child-health work, the increase in numbers of babies supervised, and the provision of opportunities for the midwives to improve their practice—which has included in addition to supervision and midwives' conferences a course of instruction for midwives in the Jersey City Hospital.

Infant mortality has shown a downward trend since 1922, when 79 infants under 1 year of age died in every 1,000 born alive. In 1927 the number was 61, the lowest since the State entered the United States birth-registration area. Though there has been no decided drop in the neonatal death rate some reduction has been effected during this period. Deaths during the first month of life depend to a great extent on the care of the mother during pregnancy and confinement. According to the State figures the neonatal death rate was 37.2 per 1,000 live births in 1922 and 33.8 in 1927, a reduction of 9.1 per cent. Although the reduction is small it is encouraging, as this period is the most difficult to control.

Fluctuations in maternal mortality rates have occurred from year to year, but the rate for 1927 (62.6 per 10,000 live births) was very little below that of 1922 (64.1). The maximum rate of the period (64.3) occurred in 1925, the minimum in 1923 (57). The rates for 1924 and 1926 were 62.3 and 57.6, respectively.



Distribution of maternity and infancy work, by counties; New Mexico, 1922-1928

## NEW MEXICO

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of public welfare, bureau of public health, division of child hygiene and public-health nursing, Sante Fe.

Funds expended: Federal, \$12,749.79; State, \$7,503.12; total, \$20,252.91.

#### Staff:

Director (nurse), 2 nurses, 2 vital-statistics clerks (1 part time), 1 book-keeper (part year, part time), 1 stenographer (part time). Four county nurses were paid in part from maternity and infancy funds.

Volunteer assistants—a number of physicians, 4 dentists, 34 nurses, 451 lay persons.

#### Activities:

Child-health conference conducted by physicians—1; infants and preschool children registered and examined—41.

Defects found in children examined at the conference—48; children having defects—25.

Conferences conducted by nurses, physicians present at some—43; children inspected—541; mothers instructed in prenatal care—52.

Dental conferences—2; preschool children receiving dental examination—60.

Classes for girls in care of infants and preschool children—35 organized; girls enrolled—686; number completing course—677; lessons in course—10.

Classes for mothers—8 organized; mothers enrolled (plus those carried over from previous year) and completing course—91; lessons in course—8.

Midwives' classes—2 meetings conducted, with attendance of 21. The midwives were instructed in the importance of calling a physician for unusually long or complicated cases, in the preparation of supplies for delivery, in the care of the baby, in the use of a prophylactic in the eyes of the newborn, and in the filling out of birth certificates. Many midwives living in isolated districts were given similar instruction in their own homes by the nurses.

Home visits by nurses—4,291 (prenatal cases seen, 420; maternity cases, 422; infants and preschool children, 2,902; visits to midwives, 245).

Community demonstrations—7, of a maternity and infancy public health nursing program lasting 3 to 4 months, in 7 counties. Special emphasis was placed on birth and death registration to bring the State into the United States birth and death registration areas.

Group demonstrations—262, of phases of prenatal, obstetrical, postnatal, and infant care at classes, conferences, and meetings of various organizations.

Surveys—2: (1) Of birth registration, in 11 counties. (2) Of 2 hospitals.

Campaigns—2: (1) For promotion of birth registration, state-wide. (2) For immunization against diphtheria, in 4 counties.

Talks and lectures—118, to audiences totaling 4,850 persons.

Literature distributed—35,189 pieces.

Nutrition work was done through instruction to individual mothers.

Exhibits conducted—27, including layette, baby's bath tray, equipment for preparing food formulas, baby pen, and various kinds of home-made baby beds. Exhibit material was lent twice.

Breast feeding was promoted through instruction in visits made to homes, in talks given, and in literature distributed.

Infants born in the State during the year—10,751 reported; infants under 1 year of age reached by the work of the division—10,751; expectant mothers reached—562.

The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

## Activities—Continued

Counties in the State—31; counties in which maternity and infancy work was done during the year—14; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—31.

Since the beginning of the State's cooperation under the maternity and infancy act two counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

As a result of the division's work many county nurses not paid from maternity and infancy funds and many school nurses included maternity and infancy work in their programs. They conducted 39 child-health conferences with an attendance of 323 infants and preschool children and 10 prenatal conferences with an attendance of 53 women, made 1,993 home visits, and conducted 98 home demonstrations.

The division gave advisory and supervisory assistance to local organizations doing maternity and infancy work.

The following organizations cooperated in the division's work: State bureau of child welfare, State federation of women's clubs, State league of women voters, State public-health association, Congress of Mothers, and the parent-teacher association.

Among the outstanding features of the year's work were the efforts made to improve birth registration and the fact that a nurse paid in part from maternity and infancy funds in one county was enabled, through the county's employment of a school nurse, to devote her entire time to maternity and infancy work.

## TYPES OF WORK AND SOME RESULTS

The division of child hygiene and public-health nursing was established in the bureau of public health of the State department of public welfare in 1920. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on March 11, 1921. From the beginning of the State's cooperation until July 1, 1925, the Federal funds were divided between the bureau of public health and the bureau of child welfare, both in the State department of public welfare. An expansion of the program has been possible since all maternity and infancy work has been directed by one State agency.

A nurse has directed the maternity and infancy work in the division of child hygiene and public-health nursing. Two staff nurses have assisted in the general field work, and nurses paid in part from maternity and infancy funds (four in 1928) have been assigned to counties.

The program has been mainly one of public-health nursing characterized by visits to the homes of infants, children, and expectant mothers. The nurses also have conducted classes for girls in infant and child care and classes for mothers in infant and prenatal care. Work with midwives has been continued, and efforts have been increased to improve birth and death registration in the State.

Every county in the State has had some phase of maternity and infancy work, such as prenatal conferences, infant and preschool-child conferences, classes for girls in infant care, classes or personal instruction for midwives, home visits by nurses, work for promotion of birth registration, and group and county surveys. Considering the large area of the State, the difficulty of access to many counties due to barriers of mountains, rivers, and deserts, and the difficulty of communication due to the polyglot character of the population a creditable amount of work has been accomplished. (Among the inhabitants are native Americans, Spanish Americans, Mexicans, and Indians, and in the mining region Negroes and immigrants from the south of Europe.)

As the State has not been admitted to the United States birth-registration area, no statement as to mortality rates can be made.

For the distribution of maternity and infancy work in the counties of the State from 1922 to 1928, see map on page 104.

## NEW YORK

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, division of maternity, infancy, and child hygiene, Albany.

Funds expended: Federal, \$91,455.55; State, \$88,717.46; total, \$180,173.01.

#### Staff:

Director (physician, not paid from maternity and infancy funds), 10 physicians (2 part year, 5 part time), 43 nurses (1 part time, 15 part year), 1 dental hygienist, 1 nutritionist, 2 vital-statistics clerks (1 part time), 1 bookkeeper, 1 advance agent (for health conferences), 2 clerks, 3 stenographers, 1 motion-picture operator, 1 chauffeur. Twenty-six county and community nurses were paid in part from maternity and infancy funds. Two hundred and ninety-two physicians throughout the State were paid for occasional service.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians—1,102; expectant mothers registered—2,529; number examined—2,215; infants and preschool children registered and examined—2,784; visits to conferences by expectant mothers—21,461; visits by infants and preschool children—3,262.

Child-health conferences conducted by physicians—772; infants and preschool children registered—15,197; number examined—11,057.

Defects found in children examined at child-health conferences—19,997; children having defects—7,716. Parents had defects corrected in 539 of the children (report incomplete).

Prenatal conference conducted by physicians—359; expectant mothers registered—2,233; number examined—2,109; visits to conferences—2,494.

Conferences conducted by nurses, no physician present—614; children inspected—3,316; mothers instructed in prenatal care—311; visits to conferences by children—5,638; visits by mothers—565.

Preschool children receiving dental examination by the dental hygienist—3,652.

New permanent combined prenatal and child-health centers—3 established as a result of the maternity and infancy work or as part of community demonstrations conducted by the division's staff. They are supported by local public funds.

New permanent child-health centers—9 established as a result of the maternity and infancy work or as part of community demonstrations conducted by the division's staff. They are supported by local funds.

New permanent prenatal centers—2 established as part of community demonstrations conducted by the division's staff. They are supported by local public and private funds.

Classes for girls in care of infants and preschool children—15 organized; girls enrolled—323; number completing course—198; lessons in course—8 to 30.

Classes for mothers—108 organized; mothers enrolled plus those carried over from previous year—2,122; number completing course—950; lessons in course—8. "Family-health conferences" were conducted in 92 communities; the course of instruction consisted of 8 lessons on the health of the family, with special emphasis on the care of mothers and children.

Home visits by nurses—38,198 (prenatal cases seen, 2,427; obstetrical cases, 734; postnatal cases, 2,377; infants, 5,200; preschool children, 7,055). In addition 26,414 home visits were made for which no record was kept of number of cases seen.

Maternity homes inspected—33; inspections made—34.

## Activities—Continued.

- Boarding homes for infants and preschool children inspected—70; inspections made—186.
- Community demonstrations—37 (some continued from previous year), of maternity and infancy public-health nursing, prenatal nursing, and breast feeding. Seven were county-wide, 30 covered a city or community. The maternity and infancy public health nursing demonstration in one city served also as a teaching center for nurses on the State staff and other nurses who wished to obtain experience in this field of public-health work. During the year four counties and five cities and communities assumed the responsibility for work begun in these demonstrations.
- Group demonstrations—approximately 3,200, on various phases of maternal and infant care. Individual demonstrations were made for women attending prenatal conferences and for midwives.
- Survey—1, of hospitals taking maternity cases.
- Campaign—1, for promotion of breast feeding, in 1 city and its vicinity. All the staff nurses assisted also in a state-wide campaign conducted by the State department of health to have children immunized against diphtheria.
- Talks and lectures—232.
- Literature distributed—302,989 pieces.
- Graduate courses in maternity and infancy work for nurses—4; nurses enrolled—58; number receiving certificates—47.
- Graduate courses for physicians—6 (2 in pediatrics, 4 in obstetrics). Courses in pediatrics, each consisting of 6 lectures, were given in 2 counties, courses in obstetrics were given in 3 counties, and 3 lectures completing a course in obstetrics begun in the previous year were given in 1 county.
- Nutrition work was done through courses, classes, and lectures.
- Exhibits conducted—37. Exhibit material prepared—baby's traveling kitchenette. Exhibit material was lent 151 times.
- Statistical study made—puerperal deaths (in progress during previous fiscal year, completed during year under review).
- Breast feeding was emphasized in all the activities of the division, especially in the campaign and the demonstration on this subject, in instruction given to mothers at prenatal conferences, and in the instruction given to staff nurses and local nurses who attended the division's teaching center for nurses.
- Infants born in the State during the year—224,336; infants under 1 year of age reached by the work of the division—8,309; preschool children reached—15,406; expectant mothers reached—14,297. (All figures are exclusive of children and expectant mothers reached by literature.)
- The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.
- Counties in the State—62; counties in which maternity and infancy work was done during the year—62.
- Since the beginning of the State's cooperation under the maternity and infancy act seven counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.
- As a result of the division's work Child Health Day and Child Health Week programs were conducted by nurses throughout the State. Local nurses conducted demonstrations at fairs in 33 counties, using demonstration material furnished by the division.
- The following organizations cooperated in the division's work: State medical association, State dental association, State federation of women's clubs, State league of women voters, New York State Charities Aid Association, Home Bureau, Catholic Daughters of America, two fraternal organizations, chambers of commerce, and the parent-teacher associations. Among the children examined at conferences reported in the foregoing paragraphs 226 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

Among the outstanding achievements of the year were the assumption by seven local communities of the responsibility for maternity and infancy work begun with maternity and infancy funds and the provision at the teaching center for giving instruction in maternity and infancy work to nurses other than those paid from maternity and infancy funds.

## TYPES OF WORK AND SOME RESULTS

A division of maternity, infancy, and child hygiene has existed in the State department of health since 1914. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on May 29, 1923. Thus a larger appropriation was made available to the division, and an expansion of the program followed.

A physician has directed the work of the division during the entire period of cooperation. Assistance has been given by a large State staff, including physicians, nurses, a dental hygienist, and a nutritionist, many of whom are paid from maternity and infancy funds and who are detailed to counties and communities to conduct demonstrations relating to maternity and infancy work.

The division has had the benefit of cooperation from the State medical and dental associations, the New York State Charities Aid Association, the State commission for the blind, several state-wide organizations of women, fraternal and religious bodies, chambers of commerce, and parent-teacher associations.

All the counties in the State have had some phase of maternity and infancy work in each of the past few years, and information on the care of the baby has been sent to the parents of babies whose births were registered. Groups have been reached with special class instruction—girls with instruction in infant care, mothers with instruction in prenatal and infant care, physicians with graduate courses in pediatrics and obstetrics, and public-health nurses with extension courses and with practical experience in a teaching center for maternity and infancy nursing.

A unique feature of the State program has been the development of community demonstrations; 37 such demonstrations (some lasting for a considerable period) were in progress during the period of cooperation under the act. These were sometimes in a community only, sometimes on a county-wide basis. They have varied in scope, including several breast-feeding demonstrations, maternity and prenatal nursing demonstrations, and maternity and infancy nursing demonstrations (one conducted as a teaching center). This method of promoting maternal and infant welfare has made the work intensive in the areas in which it has been conducted, and the appreciation of its value is shown by the fact that the financial support of four of the county and five of the community demonstrations has been assumed by the counties and communities, while part of the financial responsibility has been assumed by several others.

Infant mortality rates declined from 72 per 1,000 live births in 1923, the first year of the State's cooperation under the maternity and infancy act, to 59 in 1927, the lowest rate in the history of the State. This rate is 27 per cent lower than the rate for the four-year period prior to cooperation (1919-1922), which was 81.

Maternal mortality has not declined in the State since 1923. The rate for urban areas was higher in 1927 than in 1923, and that for rural areas was practically the same. Some improvement, however, is seen in the rates when a comparison is made with the four-year period prior to cooperation. For that period (1919-1922) the rate was 63.5 per 10,000 live births; for the period of cooperation (1923-1927) the rate was 58.5, or 7.9 per cent lower.

## NORTH CAROLINA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, bureau of maternity and infancy, Raleigh.

Funds expended: Federal, \$25,744.14; State, \$22,573.77; total, \$48,317.91.

#### Staff:

Director (physician), 5 nurses, 1 stenographer, 1 mailing clerk. Twenty county nurses were paid in part from maternity and infancy funds.

Volunteer assistants—36 physicians.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians—5,173; expectant mothers registered and examined—1,248; infants and preschool children registered and examined—11,773; visits to conferences by children—13,537. (These figures include some individual conferences held in county health department offices in counties in which nurses were paid in part from maternity and infancy funds.)

Parents had defects corrected in 1,051 of the children examined at the conferences conducted by physicians.

Conferences conducted by nurses, no physician present—4,530; children inspected—8,227; mothers instructed in prenatal care—700; visits to conferences by children—10,283; visits by mothers—1,149. (These figures include some individual conferences in county health department offices, in counties in which nurses were paid in part from maternity and infancy funds.)

New permanent combined prenatal and child-health center—1 established as a result of the maternity and infancy work. It is supported by State and county funds.

Classes for midwives—24 organized, in 6 counties; midwives enrolled—276; number completing course—180; lessons in course—6.

Home visits by nurses—33,473 (prenatal cases seen, 4,736; postnatal cases, 5,262; infants, 14,291; preschool children, 8,839).

Talks and lectures were given to mothers at group conferences. Total attendance—9,784.

Literature distributed—127,290 pieces.

New names registered for prenatal letters—9,522; prenatal letters distributed—4,191 sets. Full sets had not yet been sent for names registered in the last half of the year under review.

Nutrition work was done through individual instruction by staff and county nurses.

Breast feeding was stressed in pamphlets on the subject, of which 11,883 were distributed.

Infants born in the State during the year—82,098; infants under 1 year of age reached by the work of the bureau—33,991; preschool children reached—37,609; expectant mothers reached—16,206.

Counties in the State—100; counties in which maternity and infancy work was done during the year—40; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—49.

As a result of the bureau's maternity and infancy work public-health nurses not paid from maternity and infancy funds included maternity and infancy work in their programs in seven counties.

The following organizations cooperated in the bureau's work: State board of education, State board of charities and public welfare, State college of agriculture and engineering (home-demonstration department), and the parent-teacher association. They assisted in the preschool-child and nutrition work and in the work with midwives. Among the children examined at conferences reported in the foregoing paragraphs 7,852 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.



## TYPES OF WORK AND SOME RESULTS

The bureau of maternity and infancy was established in the State board of health in 1919. The governor accepted the provisions of the maternity and infancy act on March 16, 1922. This was followed by legislative acceptance approved by the governor on March 5, 1923.

A medical director has been in charge of the work, and a small group of staff nurses has given advisory service in the field activities. The outstanding feature of the administration has been the detailing of an increasing number of full-time maternity and infancy nurses to counties. During each of the past two years 20 counties have had such service.

Cooperation has been given to the program by other branches of the State government, the State college of agriculture and engineering, and the parent-teacher association.

The major activities during the period of cooperation have been child-health conferences conducted by both physicians and nurses, nurses' visits to mothers and babies in their homes, and instruction and supervision of colored midwives by the nurses.

There was a slight reduction in infant mortality in 1927 compared with 1922 (the year in which cooperation under the act was begun). The rate in 1922 was 80 (deaths of infants under 1 year of age per 1,000 live births); in 1927 the rate was 79.

The maternal death rate was lower in 1927 than in 1922 in both urban and rural areas; the difference, however, was greater in the rural areas (21.8 per cent) than in urban areas (12.6 per cent). In the rural areas the rate for both white and colored mothers was lower in 1927 than in 1922; in the urban areas reduction was apparent for the white group only. The rates for the State as a whole and for urban and rural areas in 1922 and 1927 were as follows:

*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births)*

	1922	1927
State.....	79.5	65.6
Urban.....	128.5	112.3
Rural.....	73.1	57.2

## NORTH DAKOTA

### STAFF AND ACTIVITIES IN 1923

#### Administrative agency:

State department of public health, division of child hygiene and public-health nursing, Bismarck.

Funds expended: Federal, \$6,600; State, \$1,600; total, \$8,200.

#### Staff:

Director (physician), 1 physician (1½ months), 1 nurse (part year), 1 stenographer.

#### Activities:

Child-health conferences conducted by physicians—167; infants and pre-school children registered and examined—5,006. A number of expectant mothers attended these conferences and were given advice on prenatal care.

Defects found in children examined at conferences—6,419; children having defects—3,554.

Survey—1, of birth registration, in 1 city.

Talks and lectures—17.

Literature distributed—17,937 pieces. Pamphlets on prenatal care were supplied to physicians for their patients, and pamphlets on infant care were furnished to hospitals for mothers of infants born in the hospitals.

Exhibit conducted—1, at the meeting of the State education association.

Statistical study made—maternal deaths in the State in 1927.

Breast feeding was stressed in the instruction given to mothers at health conferences.

Infants born in the State during the year—14,198; infants under 1 year of age reached by the work of the division—approximately 15,000; preschool children reached—3,961.

The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics. Copies of the pamphlets on prenatal care were mailed also to all persons whose marriage certificates were recorded in the State bureau of vital statistics during the year. Each pamphlet was accompanied by a letter mentioning other literature available from the division.

Counties in the State—53; counties in which maternity and infancy work was done during the year—22; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—42.

The following organizations cooperated in the division's work: State and district medical societies, American Red Cross, women's federated clubs, Woman's Christian Temperance Union, homemakers' clubs, and the parent-teacher association. They sponsored conferences and assisted in distributing literature. Physicians, county school superintendents, and county nurses also gave generous assistance. A nurse from the division's staff did the organization work for the first conference held in each community, but all later conferences were organized by local persons, so that everything was in readiness when the State conference unit arrived.

The outstanding features of the year's work were the child-health conferences and the distribution of more than 14,000 copies of a pamphlet on infant care.

### TYPES OF WORK AND SOME RESULTS

The division of child hygiene and public-health nursing was established in the State department of public health in 1922. The governor accepted the provisions of the maternity and infancy act on January 9, 1922. This was followed by legislative acceptance approved by the governor on March 2, 1923.

A medical director has directed the field work and conducted most of it with the assistance of nurses. Additional physicians have been employed for short periods.

Cooperation has been given by State and district medical societies, the American Red Cross, women's organizations, and the parent-teacher association.

Itinerant child-health conferences have been a notable feature of the work. Distribution of literature has been a means of reaching many parents. The Children's Bureau bulletin *Infant Care* has been mailed to parents of all infants whose births were registered in the State bureau of vital statistics. Physicians were supplied with the bureau's bulletin *Prenatal Care*, and many requested copies for their patients.

Apparently the work of the staff, limited though it has been, is reflected in the lower maternal and infant mortality rates for 1927 compared with 1924, the year in which the State was admitted to the United States birth-registration area. The maternal mortality rate for the entire State was 56.9 per 10,000 live births in 1924 and 51 in 1927; the rural rate was 51.5 in 1924 and 43 in 1927. The infant mortality rate in 1924 was 67 (deaths of infants under 1 year of age in every 1,000 born alive); in 1927 it was 63, the lowest rate since the State was admitted to the United States birth-registration area.

## OHIO

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, division of child hygiene, Columbus.

Funds expended: Federal, \$29,649.72; State, \$22,645.85; total, \$52,295.57.

#### Staff:

Director (physician, not paid from maternity and infancy funds), 1 physician, 5 nurses (1 part time), 1 maternity-home inspector (nurse), 1 lecturer, 1 vital-statistics clerk, 1 publicity clerk (part time), 1 financial clerk (part time), 1 general clerk, 2 motion-picture operators. Twenty-one county nurses in 10 counties and one city nurse were paid in part from maternity and infancy funds. Physicians were employed by the day as needed.

#### Activities:

Child-health conferences conducted by physicians—85; infants and preschool children registered and examined—3,828.

Defects found in children examined at conferences—5,800; children having defects—3,786. Parents had about 17 per cent of the defects corrected.

Conferences conducted by nurses, no physician present—204; children inspected—2,826; mothers instructed in prenatal care—60; visits to conferences by mothers—224.

New permanent combined prenatal and child-health centers—4 established as a result of the maternity and infancy work. They are supported by local boards of health.

Classes in care of infants and preschool children (health builders' leagues)—95 organized; pupils enrolled—2,152 girls, 45 boys; number completing course—2,089; lessons in course—14.

Home visits by nurses—12,262 (prenatal cases seen, 510; infants, 2,240; preschool children, 2,621).

Maternity homes inspected—208; inspections made—263.

Infant homes inspected—16; inspections made—21.

Group demonstrations—3, at meetings of regional parent-teacher associations and federations of women's clubs.

Campaign—1, for observance of May Day as Child Health Day. The director of the division was May Day chairman for the State. A total of 105 celebrations were held. As a result of this campaign many preschool children were given physical examination, and a number of local child-hygiene councils were formed.

Talks and lectures—440, 349 of which were given by the lecturer on the bureau's staff at grange meetings, farm women's club meetings, farmers' institutes, teachers' institutes, schools, colleges, and groups from the Young Men's Christian Association and Young Women's Christian Association.

Literature prepared—The Care of the Baby (textbook for health builders' leagues).

Literature distributed—227,500 pieces.

Exhibits conducted—19, of which 18 were at county fairs. Exhibit material prepared—posters and films.

Statistical study made—maternal and infant mortality, by cases receiving instruction in prenatal care and cases not receiving this service.

Breast feeding was promoted through instruction given in home visits.

The division does not send literature on infant hygiene to parents of infants whose births are registered in the State bureau of vital statistics, as nearly all local boards of health mail or deliver birth certificates and literature upon receipt of the birth notice.

## Activities—Continued.

Counties in the State—88; counties in which maternity and infancy work was done during the year—68; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—77.

Since the beginning of the State's cooperation under the maternity and infancy act six counties and two cities have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

Advisory service by means of visits was given to all nursing services in the State. Reports submitted by local boards of health show an increase in the child-hygiene work done by means of nursing visits.

The following organizations cooperated in the division's work: American Red Cross, State league of women voters, public-health leagues, and parent-teacher associations. All the children examined at conferences conducted by physicians reported in the foregoing paragraphs were examined in the "Get ready for school" drive sponsored by the parent-teacher association.

One maternity and infancy nurse was sent with another nurse to do relief work in the mine regions. They were able in conjunction with local public-health nurses to give special care and attention to mothers and small children and to act as a clearing house for medical and nursing service. Several hundred visits were made to prenatal and postnatal cases and to infants.

Among the outstanding features of the year's work was the active participation of local boards of health in the child-hygiene program, the child-hygiene work thus being extended under local auspices to many communities. Much of the division's work has been directed toward initiation of these local programs.

## TYPES OF WORK AND SOME RESULTS

The division of child hygiene was established in the State department of health in 1915. The governor accepted the provisions of the maternity and infancy act on December 27, 1921. This was followed by legislative acceptance approved by the governor on April 24, 1923.

A physician has directed the maternity and infancy work since the beginning of cooperation under the act. The State staff has included physicians, public-health nurses, one of whom served as inspector of maternity homes, a lecturer, clerical assistants, and motion-picture operators. An increasing number of public-health nurses paid in part from maternity and infancy funds have been detailed to counties, 10 counties and 1 city receiving the services of 21 such nurses during 1928.

Cooperation has been given by the American Red Cross, public-health leagues, women's organizations, and parent-teacher associations.

Full-time county health departments have been developed to a greater extent in Ohio than in any other State. Through this plan public-health work in the State has been decentralized, and much maternity and infancy work is conducted through the county health departments, though few of them receive maternity and infancy funds. Because of the type of administration through county health departments there have been many visits by nurses to homes. It is estimated that through nurses' visits prenatal instruction was given to 11 per cent of the mothers to whom children had been born during the year ended June 30, 1928. For the same period 23 per cent of the nursing service in rural communities and 51 per cent of the same service in cities is estimated to have been child-hygiene work. The State staff gave advisory and supervisory service and other assistance to the county departments, inspected maternity and infant homes, and contributed to the dissemination of knowledge on public health through lectures, exhibits, and motion pictures.

Maternity and infancy funds have been used since 1922 for the preparation and distribution of ampules of nitrate of silver to be used as a prophylactic in the eyes of the newborn. Ophthalmia neonatorum has decreased in the State.

Some results of the maternity and infancy work are shown by the fact that since the beginning of cooperation six counties and two cities have assumed the responsibility for work begun with maternity and infancy funds.

The infant and maternal mortality rates declined in both urban and rural areas in 1927 compared with 1921 (the year prior to the operation of the act) and the 1927 rates established new low records.

*Infant mortality rates (deaths of infants under 1 year of age per 1,000 live births)*

	1921	1927
State-----	75	62
Urban-----	76	64
Rural-----	73	59

*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births)*

	1921	1927
State-----	72.2	61.9
Urban-----	84.9	75.9
Rural-----	55.3	40.6

## OKLAHOMA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of public health, bureau of maternity and infancy, Oklahoma City.

Funds expended: Federal, \$17,818.86; State, \$18,679.48; total, \$36,498.34.

#### Staff:

Director (physician), 6 nurses (1 part year, part time), 3 clerks (2 part year), 1 stenographer. Five county nurses were paid in part from maternity and infancy funds, and a nurse paid by the United States Bureau of Indian Affairs worked among the Indians under the supervision of the State bureau of maternity and infancy.

#### Activities:

Child-health conferences conducted by physicians—111; infants and preschool children registered and examined—2,267.

Defects found in children examined at conferences—5,823; children having defects—2,060.

Dental conference—1; preschool children receiving dental examination—322.

Classes for girls and boys in care of infants and preschool children—4 organized; girls and boys enrolled and completing course—135; lessons in course—3 to 5.

Classes for Indian girls in care of infants and preschool children—28 organized; girls enrolled—415; number completing course—399; lessons in course—9 to 18.

Classes for mothers—4 organized; mothers enrolled—102; number completing course—96; lessons in course—5 or 6.

Classes for teachers in infant hygiene—3 organized; teachers enrolled plus those carried over from previous year—159; number completing course—143; number still on roll—16; lessons in course—18.

Home visits by nurses—1,495 (prenatal cases seen, 168; obstetrical cases, 13; postnatal cases, 105; infants, 798; preschool children, 1,284).

Group demonstrations—140, of dental hygiene, physical examination of infants and preschool children, and various phases of maternal and infant care.

Community demonstrations—4, of a maternity and infancy public health nursing program, including child-health conferences, classes for mothers, and classes for girls.

Surveys—4: (1) Of hospitals, in 30 counties. (2) Of midwives, in 30 counties. (3) Of birth registration, in 30 counties. (4) Of preschool children, in 3 towns and 1 village.

Campaign—1, for prevention of summer diarrhea among babies, in 2 counties.

Talks and lectures—519.

Literature prepared—Six Safe Rules for Saving Babies.

Literature distributed—383,885 pieces.

New names registered for prenatal letters—7,220; prenatal letters distributed—5,225 sets.

Graduate courses in obstetrics and in pediatrics were conducted by an obstetrician and a pediatrician lent to the State by the United States Children's Bureau. The State bureau of maternity and infancy did the organization work for these courses and assisted the physicians in every way possible.

Nutrition work was done through instruction given in talks and at group demonstrations and in instruction to individual mothers at conferences.

Exhibits conducted—57, at county and State fairs and at meetings of teachers, parent-teacher associations, and other organizations. Exhibit material was prepared on dental hygiene and on the functions of the bureau. Exhibit material was lent six times.

## Activities—Continued.

Statistical studies made—infant mortality in 1927, in 14 counties and 5 cities; deaths from diarrhea of infants and preschool children in 1927, in 77 counties and 5 cities.

Breast feeding was stressed in literature distributed, talks given, and exhibits conducted, and in the graduate courses in pediatrics.

Infants born in the State during the year—47,709 live births reported; infants under 1 year of age reached by the work of the bureau—6,899; preschool children reached—7,637; expectant mothers reached—7,266.

Counties in the State—77; counties in which maternity and infancy work was done during the year—77.

As a result of the bureau's work county nurses have given more time to maternity and infancy work, a health center for colored children was started in one town, and classes in child care were taught in a number of public schools by home-economics teachers.

The following organizations cooperated in the bureau's work: State university (extension service), State agricultural and mechanical college (rural-extension service), State federation of women's clubs, and parent-teacher associations.

An outstanding achievement of the year was the admission of the State to the United States birth-registration area.

## TYPES OF WORK AND SOME RESULTS

The bureau of maternity and infancy was established in the State department of public health in 1922. The governor accepted the provisions of the maternity and infancy act on December 17, 1921. This was followed by legislative acceptance approved by the governor on March 31, 1923.

During the early years of cooperation with the Federal Government the work was in charge of a nonprofessional director, but since 1925 a physician has directed the work. The State staff has included six field nurses the past three years, and in addition five nurses paid in part from maternity and infancy funds were detailed to county health departments.

Cooperation has been given in the State program by State educational institutions, by women's organizations, and by parent-teacher associations.

Emphasis has been placed on dissemination of information relating to maternal and child care through distribution of literature and prenatal letters, through other forms of publicity, and through instruction of special groups in special phases of maternal and infant care. Classes in infant care have been conducted for girls (including Indian girls) and also for boys, likewise classes in prenatal and child care for mothers, and classes in infant and child care for teachers. Graduate courses in both pediatrics and obstetrics have been arranged for physicians.

Child-health conferences and visits of public-health nurses have been features of the educational work with parents.

Nitrate of silver for the prevention of ophthalmia neonatorum is distributed through the use of maternity and infancy funds.

A campaign for entry into the United States birth-registration area was conducted by the State department of public health, and assistance was given to the campaign by the staff of the bureau of maternity and infancy. The State was admitted to both the birth and death registration areas in April, 1928.

As the State was so recently admitted to the registration areas no statement as to mortality rates can be made.



## OREGON

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, bureau of child hygiene, Portland.

Funds expended: Federal, \$13,117.41; State, \$12,313.09; total, \$25,430.50.

#### Staff:

Director (State health officer serving), 1 physician (part year, part time), 1 prenatal supervisor (nurse), 2 nurses (1 part year), 3 stenographers (part year). Other clerical assistants were employed as needed. Seventeen county nurses in six counties were paid in part from maternity and infancy funds.

Volunteer assistants—54 physicians, 32 dentists, 26 nurses, 593 lay persons.

#### Activities:

Child-health conferences conducted by physicians—326; infants and preschool children registered—3,532; number examined—3,520; visits to conferences—4,348.

Defects found in children examined at conferences—4,237; children having defects—1,890. Parents had defects corrected in approximately 75 per cent of the children.

Prenatal conferences conducted by physicians—137; expectant mothers registered—419; number examined—393; visits to conferences—1,516.

Dental conferences—40; preschool children receiving dental examination—534.

New permanent child-health centers—6 established as a result of the maternity and infancy work. They are supported by local funds.

Classes for girls in care of infants and preschool children—17 organized; girls enrolled—223 (report incomplete); number completing course—221 (report incomplete); lessons in course—12. A course of 25 lectures in personal hygiene and child development and care was given also to the girls of the junior and senior high schools in one county.

Classes for mothers—2 organized; mothers enrolled—28.

Home visits by nurses—5,128 (prenatal cases seen, 773; obstetrical cases, 204; postnatal cases, 534; infants, 1,125; preschool children, 2,807).

Group demonstrations—298, on various phases of maternal and infant care, mostly in connection with classes for girls.

Surveys—4: (1) Of hospitals, in one county. (2) Of birth registration, in one county. (3) Of health conditions, made with the cooperation of women's clubs, in the larger communities of the State. (4) Of infant mortality, in one county.

The bureau is cooperating in a study of maternal mortality being conducted in the State by the United States Children's Bureau with the endorsement of the State medical society.

Campaigns—7: (1) For child-health conferences, in all counties except those having county health units (in progress). (2) For child-health conferences, in one county having a county health unit. (3) For the observance of May Day as Child Health Day, state-wide. (4) For pasteurization of milk, in two counties. (5) For the establishment of dental clinics, in one county. (6) For immunization of preschool children against contagious diseases, in four counties. (7) For prevention of infantile paralysis, in two counties.

Talks and lectures—331 (report incomplete).

Literature distributed—approximately 50,000 pieces.

New names registered for prenatal letters—1,046; prenatal letters distributed—1,017 sets.

Nutrition work was done through class instruction and through instruction given to individual mothers at child-health conferences.

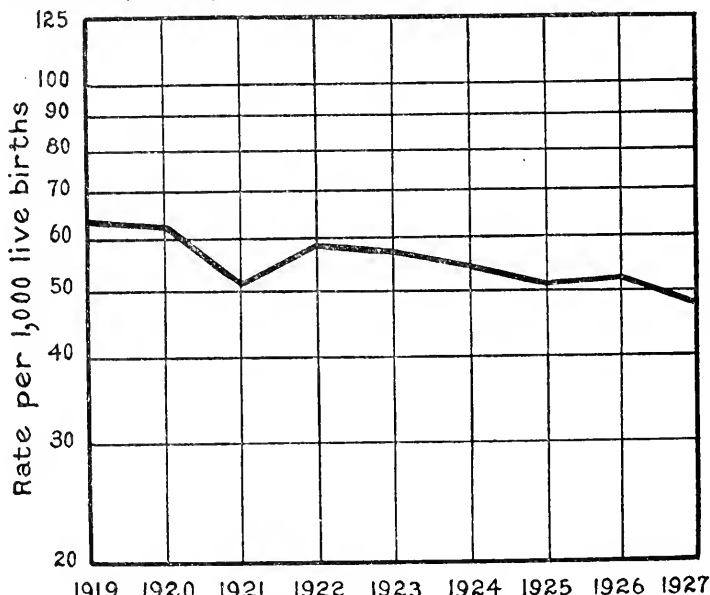
## Activities—Continued.

Exhibits conducted—100, at fairs and at celebrations of May Day as Child Health Day, also at weekly health-center exhibits (conducted by the prenatal supervisor). Exhibit material prepared—sun suit, preparation of delivery room, baby kit, posters. Exhibit material was lent five times.

Articles prepared—Raising Baby a Full-Time Job, When to Begin Getting Ready for School, May Day—Child Health Day, Are You Worthy of Your Child's Confidence? Diphtheria Immunization, Lives Saved by Immunization, Infantile Paralysis in Oregon, Aftercare of Infantile Paralysis, Infantile Paralysis Is on the Increase.

Statistical studies made—neonatal deaths and eclampsia, nursing costs, time distribution in health work, appraisal of health work, physicians' findings at health conferences, corrective work reported for children examined, neonatal deaths, 1922-1927.

Breast feeding was stressed in instruction given in letters, literature, home visits, classes, lectures, and conferences.



Source: U. S. Bureau of the Census

Trend of infant mortality; Oregon, 1919-1927

Infants born in the State during the year—14,518; infants under 1 year of age reached by the work of the bureau—2,625; preschool children reached—5,439; expectant mothers reached—2,700.

The bureau sends to parents of all infants whose births are registered in the State bureau of vital statistics a notification of registration of birth accompanied by a letter offering guidance as to the care of young children.

Counties in the State—36; counties in which maternity and infancy work was done during the year—32; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—36.

As a result of the maternity and infancy work health centers have been organized in every county in which a county nurse is employed. The bureau gave supervisory service to local organizations doing maternity and infancy work.

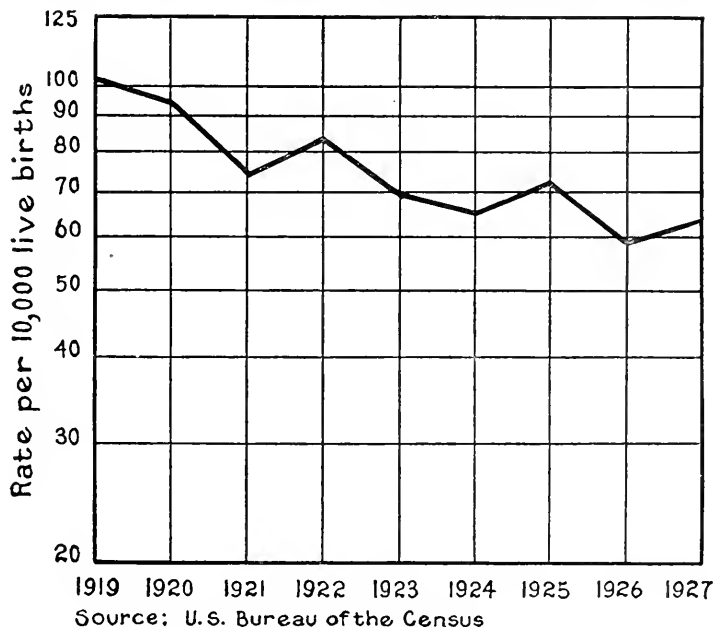
The following organizations cooperated in the bureau's work: State department of education, State university (extension service), State agricultural college, State medical society, State dental society, State tuberculosis association, State organization for public-health nursing, State federation of women's clubs, American Red Cross, and the parent-teacher association.

A general increase of interest in prenatal and postnatal work throughout the State was evidenced by requests received by the bureau for prenatal and postnatal letters and for advice and literature on maternal, infant, and child care.

#### TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene was established in the State board of health in 1921. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on December 24, 1921.

The work of the bureau has been under medical supervision from the beginning of cooperation with the Federal Government; the State health officer has directed the work in the past few years, a nurse serving as assistant director. A number of public-health nurses paid in part from maternity and infancy funds were detailed to counties for maternity and infancy work. During the year under review, as in the previous year, six counties received such service.



Trend of maternal mortality; Oregon, 1919-1927

The division has had the benefit of cooperation from the State department of education and State educational institutions, the State medical and dental societies, tuberculosis association, and organization for public-health nurses, the American Red Cross, women's organizations, and the parent-teacher association, and of professional and lay assistance from volunteer workers.

Itinerant child-health conferences were features of the earlier programs. Emphasis continues to be placed on conference work, but this is now accomplished through the examinations made at health centers and in county health departments, both of which have increased in number. Nurses detailed to counties have made more infant and prenatal nursing visits than were possible formerly.

A full-time maternity and infancy nurse has been assigned for service at the prenatal clinic of the State university medical school, which has furnished prenatal clinical material and instruction for undergraduate medical students.

Improvement in maternal and infant care has been promoted by the distribution of instructive literature through the bureau of child hygiene.

Oregon is one of the States that have had a relatively low infant mortality rate. When it was admitted to the United States birth-registration area in 1919 the rate was 63 (deaths of infants under 1 year of age per 1,000 live births).

The trend has been downward during the period of cooperation. In 1921 (the year before cooperation under the act was begun) the rate was 51; in 1927 it was 48, the lowest point in the nine years the State had been in the registration area.

The maternal mortality rate also showed a downward trend from 74.3 per 10,000 live births in 1921 to 63.6 in 1927. The reduction in maternal mortality is due in great part to decrease in both puerperal septicemia and puerperal albuminuria and convulsions. The rate in 1922 for puerperal septicemia was 27.4 per 10,000 live births; in 1927 it had declined to 21.9. In 1922 the rate for albuminuria and convulsions was 24; in 1927 it was 14.4, a saving of 10 mothers from this cause for every 10,000 babies born alive. It would seem that the excellent training in prenatal care provided for the medical students at the prenatal clinic through the cooperation of the State department of health with the State university medical school is reflected in the reduction of deaths from albuminuria and convulsions.

Information upon the basis of which plans may be made for further attack on the problem of maternal mortality will be available as a result of the study of this subject being made in the State by the United States Children's Bureau (with the cooperation of the State bureau of child hygiene and the indorsement of the State medical society).

## PENNSYLVANIA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, bureau of child health, preschool division, Harrisburg.

Funds expended: Federal, \$75,735.98; State, \$63,810.99; total, \$139,546.97.

#### Staff:

Director (physician), 8 physicians (1 part time, 6 for two months or less), 4 dental hygienists (for 3 months), 2 midwife supervisors (physicians), 3 field workers, 14 vital-statistics clerks, 2 stenographers, 3 clerks. Eleven community nurses and 140 to 150 nurses in the public health nursing division of the State department of health were paid in part from maternity and infancy funds.

Volunteer assistants—more than 850 physicians, many nurses and lay persons.

#### Activities:

Child-health conferences conducted by physicians—6,216 (6,113 at child-health centers, 133 on the health cars); infants and preschool children registered and examined—19,219 (12,033 at child-health centers, 7,186 on the health cars); visits to conferences—87,552 (80,366 to health centers, 7,186 to the health cars). Two cars, each staffed by two physicians, two dental hygienists, and two nurses and equipped for health conferences, which were sent out in the field in June, 1927, continued their work during July and August of that year, and again went into the field in June, 1928.

A complete record was not kept of the number of children having defects and the number of corrections made. However, the correction of 5,544 defects was reported for children attending the child-health centers, and it was estimated that about 50 per cent of the children had defects corrected following the examinations made on the health cars.

Prenatal conferences conducted by physicians—310; expectant mothers registered and examined—329; visits to conferences—1,513.

The division gave advisory service and furnished literature and record blanks to child-health centers and prenatal centers supported by other agencies, at which physicians conducted 9,358 child-health conferences (examining 30,654 infants and preschool children), and 4,462 prenatal conferences (examining 14,027 expectant mothers). Infants and preschool children made 214,564 visits to these conferences, and expectant mothers made 62,365 visits.

New permanent child-health centers—36 established. The nursing service of 15 is paid for by Federal and State funds; that of 21, by funds from other agencies.

Intensive work among midwives was continued in nine counties in the coal regions of the State and was extended to one more county. The midwives were supervised and given a course of instruction by two women physicians. The number of licensed midwives under supervision to December 31, 1927, was 511. They attended 7,134 deliveries in 1927; there were 9 maternal deaths among the women attended by them, or a maternal mortality rate of 1.3 per 1,000 deliveries. All deaths of mothers from causes associated with childbirth which a midwife had attended at any time during the labor were counted as deaths in the midwife's practice even though a physician was called later and signed the death certificate. Three institutes for midwives were held, the program (in which both physicians and nurses participated) being conducted partly in English, partly in other languages for the benefit of the women who did not understand English.

## Activities—Continued.

Home visits by nurses—43,903 (to prenatal cases, 2,106; postnatal cases, 7,314; infants and preschool children, 34,483).

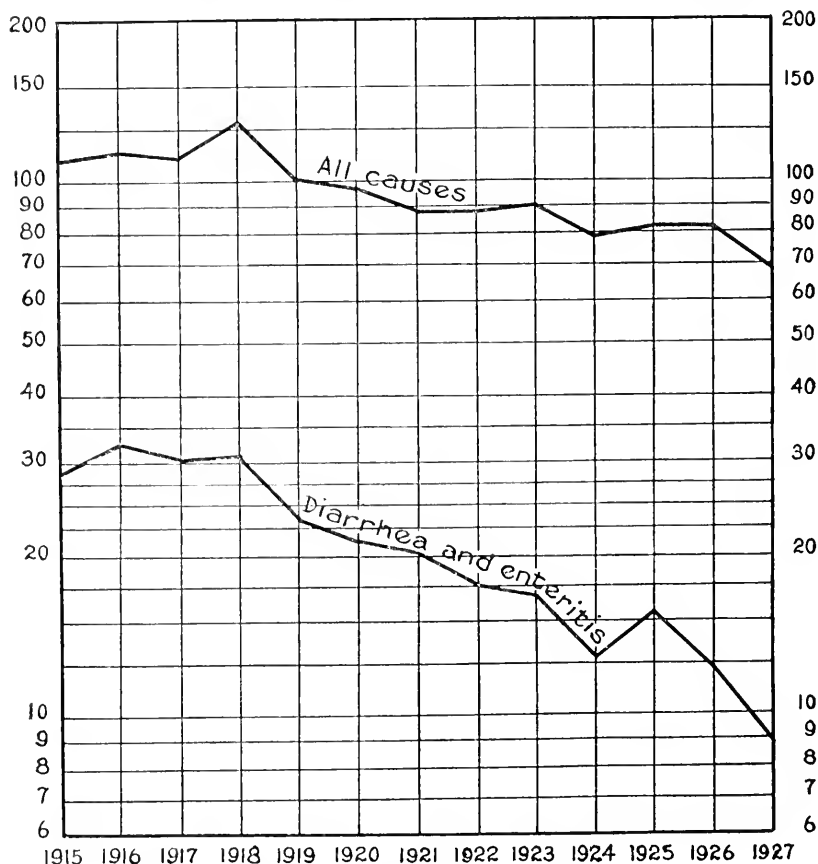
Talks and lectures—122.

Literature prepared—Manual for Expectant Mothers, Baby Book (revised).

Literature distributed—147,902 pieces.

Campaign—1, state-wide, for observance of May Day as Child Health Day.

The aim was to have permanent child-health activities culminate in the special celebrations or to make the celebration the starting point for other worth-while projects. Health officers of both public and private organizations, school officials, churches, motion-picture theaters, news-



Source: United States Bureau of the Census.

Deaths of infants under 1 year of age from all causes and from diarrhea and enteritis, per 1,000 live births; Pennsylvania, 1915-1927

papers, merchants, dairymen, and various clubs and fraternal organizations cooperated. Proclamations, slogans, posters, radio talks, window displays, and news articles were employed in arousing interest in the campaign. Local celebrations by groups, communities, and counties included drives to have preschool children examined and their defects corrected before the children should enter school, toxin-antitoxin campaigns, plays, pageants, parades, weight check-ups, health clowns, exhibits, and demonstrations. Reports of celebrations were received from 52 of the 67 counties in the State. Programs were conducted in 334 com-

## Activities--Continued.

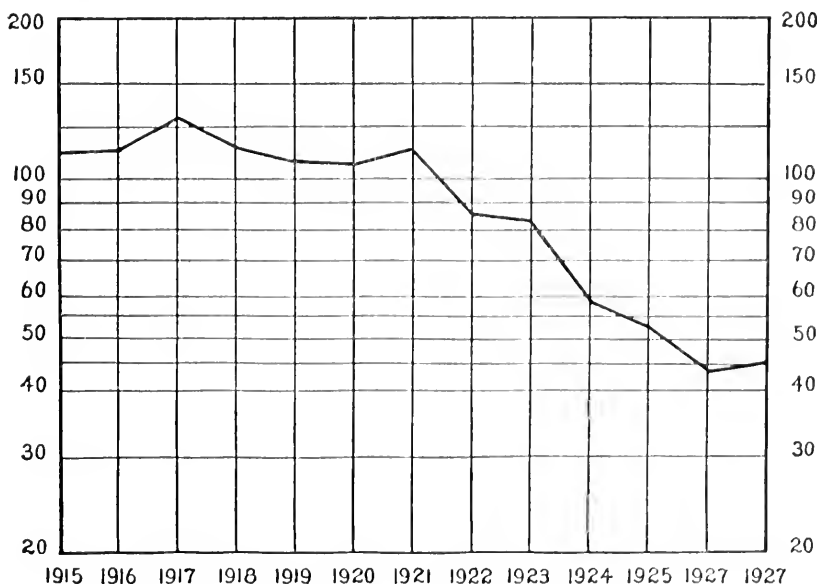
munities, 15,599 infants and preschool children were given physical examination, 440 children were vaccinated against smallpox, and 33,610 children were immunized against diphtheria.

Exhibits conducted 2. Exhibit material prepared—basket crib, spot maps, charts, and diagrams.

Articles prepared Birth Registration, a Problem for Popular Interest; Lowering the Infant Mortality Rate in Pennsylvania; Reports of Child Health Work; Maternity and Infancy Work in Pennsylvania under the Sheppard-Towner Act; Health-Car Work in Pennsylvania.

Infants born alive in the State during the calendar year 1927—210,023; infants under 1 year of age reached by the work of the division during the year ended June 30, 1928—26,882; preschool children reached—28,916; expectant mothers reached—16,020. (Report incomplete.)

The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics. Co-operation with the bureau of vital statistics in sending birth certificates to the parents of all infants as soon as births were registered was continued in the year under review.



Source: United States Bureau of the Census

Deaths of children under 5 years of age from diphtheria, per 100,000 estimated population of these ages; Pennsylvania, 1915-1927

Counties in the State—67; counties in which maternity and infancy work was done during the year—67.

Since the beginning of the State's cooperation under the maternity and infancy act six communities have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

The following organizations cooperated in the division's work: American Red Cross, Woman's Christian Temperance Union, State league of women voters, State tuberculosis society, the parent-teacher association, and many local organizations.

Among the outstanding features of the year's work were the three institutes for midwives, the organization of the preschool work as part of the Child Health Day celebration, the visiting of postnatal cases among midwives' patients, the examinations made on the health cars, and the promotion of birth registration.

## TYPES OF WORK AND SOME RESULTS

The bureau of child health, of which the preschool division is a part, was established in the State department of health in 1919. The governor accepted the provisions of the maternity and infancy act on January 18, 1922. This was followed by legislative acceptance approved by the governor on May 31, 1923.

A physician has directed the work of the division through the entire period of cooperation with the Federal Government. Other members of the staff have been physicians, nurses, and dental hygienists. Approximately 150 nurses in the public health nursing division of the State department of health have been paid from maternity and infancy funds on the basis of actual time spent on maternity and infancy work. Nursing services in communities also have received small payments for the promotion of maternal and infant hygiene. Many physicians have been paid for services at centers (as the examination of expectant mothers, infants, and preschool children at conferences), and many others have given volunteer service of similar character. Nurses have given generous assistance, and committees of lay persons have helped at centers and sponsored them.

Cooperation has been maintained with the American Red Cross, the State tuberculosis society, women's organizations, and the parent-teacher association.

An important activity of the division has been the establishment of prenatal and child-health centers, whose support (except for the salary of the nurse in some cases) is provided by local funds; also assistance in the local organization of such centers—to which literature and record forms are furnished. At the close of the fiscal year 1928 approximately 400 centers, conducted under various auspices, were in operation in the State.

The conducting of itinerant child-health conferences by means of two health cars with suitable equipment has been continued, the staff consisting of physicians, dental hygienists, and nurses. Other features of the work have been the regulation, instruction, and supervision of white midwives, which has now been extended to 10 counties in the coal regions of the State; the conducting of an extensive antidiphtheria campaign; and the mailing of literature on the care of the baby to parents of all babies whose births are registered.

Maternity and infancy funds have been used since 1926 to provide for the free distribution of ampules of nitrate of silver to be used in the prevention of blindness in the newborn.

Results of the program are indicated by the downward trend in infant mortality rates. The rate in 1922, the year in which the State began cooperation under the maternity and infancy act, was 88 infants under 1 year of age dying in every 1,000 born alive. In 1927 the rate was 69, the lowest infant mortality rate ever recorded in the State. This meant a saving of 19 babies in every 1,000 born alive in 1927 that would have died if the 1922 rate had prevailed.

The maternal mortality rate for the State as a whole has not decreased, though the rate for rural areas declined from 48.7 per 10,000 live births in 1922 to 44.4 in 1927.



## RHODE ISLAND

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, division of child welfare, Providence.

Funds expended: Federal, \$14,076.28; State, \$9,076.28; total, \$23,152.56.

#### Staff:

Director (physician), 8 nurses (2 part year), 1 stenographer, 1 field secretary.

Volunteer assistant—1 physician.

#### Activities:

Child-health conferences conducted by physicians—210; infants and pre-school children registered—663; number examined—522; visits to conferences—3,664.

Defects found in children examined at conferences—664; children having defects—625 (including some children who were not examined by physicians but were inspected by a nurse who listed defects). Parents had defects corrected in 355 of the children.

New permanent child-health centers—3 established as a result of the maternity and infancy work. They are supported by local nursing organizations and maternity and infancy funds. Conferences in one center were conducted weekly by a local physician who volunteered his services after attending the first conference held at the center.

Class for mothers—1 organized; mothers enrolled—18; lectures in course—5. Home visits by nurses—53,605.

Group demonstrations—2, on method of giving sun baths.

Campaign—1, for immunization against diphtheria (continued from previous year).

The division is cooperating in a study of maternal mortality being conducted in the State by the United States Children's Bureau with the indorsement of the State medical society.

Talks and lectures—30.

Literature distributed—37,368 pieces.

Nutrition work was done through individual instruction to mothers in home visits.

Exhibit conducted—1, of a day nursery at a county fair. The nursery was open from 10 a. m. to 4.30 p. m., and children could be left all day in care of the staff nurses in charge. Exhibit material prepared—illustrations of the division's field work, "Time card" film. Exhibit material was lent seven times.

Infants born in the State during the year—13,396; infants under 1 year of age reached by the work of the division—1,392 (exclusive of those reached by literature distributed); preschool children reached—9,956 (exclusive of those reached by literature distributed); expectant mothers reached—1,422.

The bureau sends literature on infant hygiene to parents of all infants who live within the districts covered by staff nurses; it also supplied literature to all nursing organizations in the State during the year under review.

Counties in the State—5; counties in which maternity and infancy work was done during the year—5.

Among the outstanding achievements of the year were the campaign for immunization against diphtheria and the reduction of the infant and maternal death rates.

### TYPES OF WORK AND SOME RESULTS

The division of child welfare was established in the State board of health in 1919. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on April 17, 1925.

A medical director assisted by a staff of public-health nurses has conducted the program for maternal and infant welfare. The program has been characterized by supervision of infants through the nurses' visits in homes and the work of the medical director at child-health conferences.

During the year under review cooperation was given by local nursing organizations in the establishment of permanent child-health centers and in their maintenance.

The program of intensive supervision is reflected in the decline of the infant mortality rate from the high point of 108 per 1,000 live births in 1917 (before the division of child welfare was established) to 67 in 1927—the lowest rate the State has shown since it was admitted to the United States birth-registration area. The rate in 1918, immediately preceding the establishment of the division, was unusually high on account of the influenza epidemic. In 1925 (the year in which the State began cooperation under the maternity and infancy act) the rate was 73, a new low rate for the State. The rate of 67 for 1927 means a saving of 6 babies in every 1,000 born alive in 1927 as compared with 1925 and a saving of 41 babies in every 1,000 born alive in 1927 as compared with 1917, before the division was established and medical and nursing supervision begun.

Maternal mortality rates have not declined during the period of cooperation. In 1925 the rate was 52.1 per 10,000 live births; in 1927 the rate was 64.1. The study of maternal mortality being made in the State will furnish a basis for intensive effort toward reduction of this rate.

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## SOUTH CAROLINA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, bureau of child hygiene and public-health nursing, Columbia.

Funds expended: Federal, \$18,060.58; State \$16,355.65; total, \$34,416.23.

#### Staff:

Director (nurse), 2 physicians (part time, 1 part year), 12 nurses (7 for 2 months or less), 1 technician (1½ months), 1 vital-statistics clerk, 2 stenographers. One county nurse was paid from maternity and infancy funds.

Volunteer assistant—1 physician.

#### Activities:

Child-health conferences conducted by physicians—128; infants and pre-school children registered and examined—2,774; visits to conferences—2,888.

Defects found in children examined at conferences—2,607; children having defects—1,682.

Prenatal conferences conducted by physicians—36; expectant mothers registered and examined—99; visits to conferences—237.

Conferences conducted by nurses, no physician present—6; mothers instructed in prenatal care—17; visits to conferences—54.

Classes for girls in care of infants and preschool children—9 organized; girls enrolled—160; number completing course—118; lessons in course—10.

Classes for mothers—6 organized; mothers enrolled—87; number completing course—33; lessons in course—8 to 22.

Classes for midwives—24 organized; midwives enrolled plus those carried over from previous year—317; number completing course—104; lessons in course—10 to 12. During the year under review the nurses also held 336 review classes attended by 3,292 midwives.

A one-month institute for midwives was held in July, 1927, at the hospital of a colored school lent for the purpose by its trustees. A nurse from the bureau's staff organized the institute and conducted it with the assistance of the other staff nurses, each of whom was assigned to the work three to seven days, and of a colored nurse, who was paid by a private organization. The entire cost of the institute (excluding salaries) was covered by a charge of \$10 for room and board for the midwives and of \$1 per day for the instructor nurses. County nurses and other maternity and infancy field nurses were asked to send to the institute some of the better-educated and more intelligent midwives in their districts; and 27 midwives whose ages ranged from 17 to 56 years and who represented 13 counties registered for the course. The midwives were divided into three sections, responsible for the nursing, the kitchen and dining room, and the laundry, respectively. The whole group had daily classes in midwifery and in home hygiene and care of the sick. All the midwives attended all the deliveries of patients from the hospital's prenatal clinic that were conducted in the hospital. A local physician who volunteered his services delivered these patients. As a result of this institute so many applications were received from midwives for a similar course that it was decided to conduct an institute for three months in 1928, beginning in June. About 30 midwives registered for each of the three months. A colored nurse who was a graduate of the Bellevue Hospital Training School for Midwives was employed to assist the nurse in charge, and each of the bureau's staff nurses was assigned to the work for a 2-week period. The same physician who volunteered his services the preceding year delivered the abnormal cases and the colored nurse-midwife the normal cases that the midwives attended for

## Activities—Continued.

- instruction. An out-patient department was organized, and an instructor was sent with two student midwives to deliver patients in their homes and to give postpartum care.
- Home visits by nurses—6,030 (prenatal cases seen, 300; obstetrical cases, 20; postnatal cases, 160; infants, 751; preschool children, 2,043).
- Community demonstrations—8, lasting 1 to 3 months, of a maternity and infancy public health nursing program, in 8 counties.
- Group demonstrations—75, of various phases of maternal and child care, before midwives' classes and lay groups.
- Campaign—1, for promotion of birth registration, state-wide.<sup>a</sup>
- Talks and lectures—158.
- Literature prepared—Products of South Carolina (a bulletin on maternal and child care).
- Literature distributed—60,000 pieces.
- Nutrition work was done through instruction given at mothers' classes and in talks to other groups.
- Exhibit conducted—1, at the State fair. Exhibit material was lent twenty times.
- Breast feeding was promoted by distribution of literature on the subject. It is estimated that at least 90 per cent of the children born in the State are breast fed.
- Infants born in the State during the year—42,737; infants under 1 year of age reached by the work of the bureau—25,000; preschool children reached—2,573 (exclusive of those reached by literature distributed); expectant mothers reached—2,500.
- The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.
- Counties in the State—46; counties in which maternity and infancy work was done during the year—46.
- Since the beginning of the State's cooperation under the maternity and infancy act nine counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.
- As a result of the bureau's work much maternity and infancy work was done by industrial nurses and county nurses not paid from maternity and infancy funds. At the suggestion of the district maternity and infancy nurse a mothers' club in one town organized a toxin-antitoxin clinic, at which almost the entire preschool population was immunized. Three permanent health centers organized by a maternity and infancy nurse in another town were being equipped by local organizations.
- The following organizations cooperated in the bureau's work: State federation of women's clubs, American Legion, Council of Farm Women, and the parent-teacher association. Among the children examined at conferences reported in the foregoing paragraphs 628 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

The outstanding feature of the year's work was the institutes conducted for midwives in the summer months.

## TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene and public-health nursing was established in the State board of health in 1919. The governor accepted the provisions of the maternity and infancy act on December 31, 1921. This was followed by legislative acceptance approved by the governor on March 11, 1922.

A nurse has had immediate charge of the work of the bureau, assisted by a central staff of nurses, and physicians have been paid for part-time services. A county nurse paid from maternity and infancy funds has been detailed for full-time maternity and infancy work for the past few years. A physician gave volunteer service at a prenatal center.

Cooperation has been maintained with the American Legion, women's organizations, and the parent-teacher association.

The program of work has included child-health conferences, prenatal conferences, classes in infant and child care for girls, classes for mothers, and visits to the homes of mothers and babies by public-health nurses.

<sup>a</sup>South Carolina was admitted to the United States birth-registration area in October, 1928.

A major feature was the instruction and supervision of negro midwives. Its effect is indicated by the fact that the midwives' bags now are clean and properly equipped, also by their new pride in their work and their conscientious reporting of births. Through the development of the prenatal center for negroes established in 1926, an institute for negro midwives was developed, instruction being given at actual deliveries by a physician. This work marks a departure in the instruction of negro midwives and offers suggestions for improvement in the training of this large and unskilled but still necessary group.

The State has been both in and out of the United States birth-registration area during the period of cooperation under the maternity and infancy act, having been dropped from the area in 1925. A continuous campaign for readmission has been conducted, and in this the bureau has given cooperation and assistance.

As the State was not readmitted to the birth-registration area until after the close of the fiscal year 1928 no statement as to mortality rates can be made.

## SOUTH DAKOTA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, division of child hygiene, Waubay.

Funds expended: Total, \$7,325.18 (all Federal).

#### Staff:

Director (nurse). Two physicians, 4 nurses, 1 lecturer (part time), and 1 secretary were employed for short periods. Two county nurses were paid in part from maternity and infancy funds.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians—49; expectant mothers registered and examined—18; infants and pre-school children registered and examined—1,476.

Defects found in children examined at conferences—4,775; children having defects—1,391.

Lessons in care of infants and preschool children were given to 194 girls in 2 high schools and 1 normal school.

Classes for mothers—2 organized; mothers enrolled (plus those carried over from previous year) and completing course—257; lessons in course—7.

Maternity homes inspected—54; inspections made—63.

Group demonstrations—33, of layette, preparation of room for confinement, preparation and sterilization of obstetrical supplies, explanation of anatomical charts, and foods and other things needed by growing children.

Surveys—2: (1) Of all maternity homes and maternity departments of hospitals in the State. (2) Of the extent of infantile paralysis in the State.

Campaign—1, for observance of May Day as Child Health Day. Circular letters asking for local cooperation were sent out, and assistance was given in planning local programs and health conferences. Many children were given physical examinations at the conferences organized. The extension department of the State college of agriculture made plans to indicate a day in its yearly program for such observance of May Day.

Talks and lectures—16.

Literature prepared—Mother's Book (new edition).

Literature distributed—23,638 pieces.

New names registered for prenatal letters—634; prenatal letters distributed—722 sets. Letters were sent to all the physicians in the State advising them that the division had prenatal letters and literature for distribution and inclosing cards for use in requesting copies of the prenatal letters for their patients. Many physicians took advantage of this service.

Nutrition work was done through the distribution of diet slips entitled "Food Suitable for the Growing Child."

Exhibit conducted—1, at the State fair, of posters, motion pictures, layette, and room for the baby. Exhibit material was lent eleven times.

Statistical studies made—births, by attendants at birth; stillbirths, deaths of infants under 1 month of age, and deaths under 5 years, by causes; deaths of mothers from causes associated with childbirth.

Breast feeding was stressed in literature distributed, talks given, and instruction given to individual mothers at conferences.

Infants born in the State during the year—13,902 reported; infants under 1 year of age reached by the work of the division—9,114; preschool children reached—1,287; expectant mothers reached—705.

The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—64 organized, 5 unorganized (largely of Indian population under Government care); counties in which maternity and infancy

## Activities—Continued.

work was done during the year—54 organized, 1 unorganized; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—64 organized, 1 unorganized.

Since the beginning of the State's cooperation under the maternity and infancy act two counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

As a result of the division's work health conferences for preschool children were conducted in 6 towns, with an attendance of 532, and 2 county nurses not paid from maternity and infancy funds conducted mothers' classes.

The division gave supervisory assistance to local organizations, assisted them in securing personnel, and supplied literature for distribution.

From reports from child-health conferences it is estimated that 66 per cent of the babies are breast fed.

The following organizations cooperated in the division's work: State college of agriculture (extension service), State medical association, State tuberculosis association, State league of women voters, State federation of women's clubs, State graduate nurses' association, American Legion and its auxiliary, and the parent-teacher association. They assisted with health conferences, mothers' classes, and the campaign for the observance of May Day as Child Health Day.

## TYPES OF WORK AND SOME RESULTS

The division of child hygiene was established in the State board of health in 1921. The governor accepted the provisions of the maternity and infancy act on February 10, 1922. This was followed by legislative acceptance approved by the governor on March 2, 1923.

A medical director was in charge during the earlier years; later a public-health nurse directed the work. Staff nurses have been employed, and nurses paid in part from maternity and infancy funds have been detailed to counties.

The division has had the benefit of cooperation from the State college of agriculture, the State medical, tuberculosis, public-health, and graduate nurses' associations, the American Red Cross, the American Legion and its auxiliary, women's organizations, and the parent-teacher association.

Child-health conferences and combined prenatal and child-health conferences conducted by physicians have been a prominent feature of the program. Classes for mothers in infant and prenatal care also have been included.

The inspection of maternity homes and hospitals accepting maternity cases has been a duty of the division for several years through legislation assigning the responsibility for licensing and inspection to the State board of health.

Since 1924 maternity and infancy funds have been used for the free distribution of ampules of nitrate of silver for use in the eyes of the newborn. Returns from birth certificates indicate that this prophylactic is generally used.

Through the sending of literature on infant care to the parents of babies whose births are registered instruction in the care and hygiene of the baby is made available to practically all parents who can read.

During 1928 two counties assumed the financial responsibility for the maternity and infancy nurses detailed to them.

The educational work and general program established were continued during the year ended June 30, 1928, though there was a curtailment of funds in 1927.

The effect of the program is shown by the increase in requests by women for literature relating to prenatal, infant, and child care. It is shown also by the statements of many physicians that fewer women now wait until they are in labor to send for medical assistance; this the physicians attribute to the educational program in prenatal care.

The State is not in the birth and death registration areas. Legislation is necessary to meet the requirements of the United States Bureau of the Census for admission. Maternal and infant mortality rates based on figures from the Bureau of the Census consequently are not available.

## TENNESSEE

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of public health, division of child hygiene and public-health nursing, Nashville.

Funds expended: Federal, \$21,523.18; State, \$19,021.72; total, \$40,544.90.

#### Staff:

Director (physician, part time), 1 physician (11 months), 3 nurses (2 part year, part time), 1 supervisor of midwives, 1 accountant, 1 stenographer (part time). Twenty-nine county nurses in 18 counties were paid in part from maternity and infancy funds.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians—9; expectant mothers registered and examined—16; infants and preschool children registered and examined—29; visits to conferences by expectant mothers—18; visits by children—68.

Child-health conferences conducted by physicians—107; infants and preschool children registered—3,893; number examined—3,256.

Defects found in children examined at conferences—4,553; children having defects—2,141. Parents had defects corrected in 186 of the children (report incomplete).

Prenatal conferences conducted by physicians—12; expectant mothers registered and examined—57.

Conferences conducted by nurses, no physician present—65; children inspected—2,146; mothers instructed in prenatal care—879.

New permanent combined prenatal and child-health centers—2 established as a result of the maternity and infancy work. They are supported by the county health unit, colored women's federated clubs, midwives' clubs, and volunteer workers.

New permanent child-health center—1 established as a result of the maternity and infancy work. It is supported by State and county funds.

Classes for girls in care of infants and preschool children—2 organized; girls enrolled and completing course—31; lessons in course—13.

Classes for mothers—4 organized; mothers enrolled plus those carried over from previous year—121; lessons in course—6.

Classes for midwives—14 organized; midwives enrolled plus those carried over from previous year—753; lessons in course—6. Most of these midwives were enrolled in the classes conducted by the State supervisor of midwives, which had not been completed at the close of the year under review. In classes conducted by county nurses, who had only a limited territory to cover, 28 midwives completed the course.

Home visits by nurses—4,405 (prenatal cases seen, 851; postnatal cases, 1,008; infants, 1,446; preschool children, 2,108).

Maternity home inspected—1; inspection made—1.

Infant home inspected—1; inspection made—1.

Group demonstrations—33, of vision test for preschool children, equipment for midwives, maternity supplies and layette, the use of silver-nitrate solution in the eyes of the newborn, and other phases of maternal and infant care.

Surveys—2: (1) Of midwives, in 24 counties. (2) Of the prevalence of goiter, in 36 counties. As a result of the goiter survey a state-wide survey of the prevalence of goiter was made by the United States Public Health Service.

Campaigns—3: (1) For the observance of May Day as Child Health Day. (2) For checking the registration of births of children examined at child-health conferences in 21 counties. (3) For the organization of combined child-hygiene conferences and tuberculosis clinics for children, in 15 counties.



## Activities—Continued.

Talks and lectures—546, to audiences totaling 14,202 persons.

Literature distributed—50,351 pieces.

New names registered for prenatal letters—416; prenatal letters distributed—416 sets.

Graduate courses in obstetrics and pediatrics were conducted at the health officers' conference held in cooperation with Vanderbilt University.

Nutrition work was done through individual instruction of mothers.

Exhibits conducted—19, including posters, motion pictures, and models, at fairs and at various meetings. Exhibit material was lent twenty-five times.

Statistical study made—maternal and infant mortality, 1916–1926, inclusive. Breast feeding was emphasized through the distribution of 2,450 pamphlets on the subject and through instruction given to mothers at conferences and in home visits.

Infants born in the State during the year—54,057; infants under 1 year of age reached by the work of the division—1,535; preschool children reached—2,969; expectant mothers reached—969.

Counties in the State—95; counties in which maternity and infancy work was done during the year—64; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—95.

The following organizations cooperated in the division's work: State department of education, State medical association, State conference of social work, State federation of women's clubs, and the parent-teacher association. Among the children examined at conferences reported in the foregoing paragraphs, 121 were examined in the "Get ready for school" drive sponsored by the National Congress of Parents and Teachers.

## TYPES OF WORK AND SOME RESULTS

The division of child hygiene and public-health nursing was established in the State department of public health in 1922. The governor accepted the provisions of the maternity and infancy act on April 13, 1922. This was followed by legislative acceptance approved by the governor on March 24, 1923.

Physicians have directed the work of the division during most of the period of cooperation, and additional physicians have served on the staff, also public-health nurses. Changes in State administration have brought about some changes in the staff and in the program of work. Nurses have been detailed to counties and paid from maternity and infancy funds in proportion to the amount of time spent on maternity and infancy work.

The division has had the advantage of cooperation from the State department of education and from state-wide professional and lay organizations (medical association, conference of social work, federation of women's clubs, and parent-teacher association).

The State staff nurses have given advisory and supervisory services to the county public-health nurses. In addition to the usual nursing program conducted by the nurses detailed to counties, itinerant child-health conferences were conducted by a physician. The negro woman physician on the staff instructed and supervised the negro midwives and held child-health conferences for the negroes. She also conducted a campaign among the people of her own race for better registration of births and deaths.

Maternity and infancy funds have been used since 1926 for the free distribution of ampules of nitrate of silver.

The campaign for admission to the United States birth-registration area, in which the division assisted, resulted in the State's admission to the area in 1927. As the State was not admitted to the area until 1927, figures from the United States Bureau of the Census are available for that year only. The infant mortality rate for the State as a whole was 71 deaths in every 1,000 live births. In urban areas the rate was 86; in rural areas it was 67. The maternal mortality rate for the State as a whole was 71 per 10,000 live births. In urban areas the rate was 120.3; in rural areas it was 56.2.

## TEXAS

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, bureau of child hygiene, Austin.

Funds expended: Federal, \$33,413.28; State, \$34,609.64; total, \$68,022.92.

#### Staff:

Director (physician), 4 nurses (1 part year), 1 inspector of maternity and infant homes, 1 secretary, 4 stenographers, 1 mail clerk (half time).

Twenty-seven county nurses were paid for half-time maternity and infancy work (8 part year).

Volunteer assistants—491 physicians and dentists, 51 nurses.

#### Activities:

Child-health conferences conducted by physicians—383; infants and preschool children registered—5,057; number examined—4,994; visits to conferences—6,428.

Defects found in children examined at conferences—6,462; children having defects—3,852. Parents had defects corrected in 443 of the children.

Prenatal conferences conducted by physicians—22; expectant mothers registered—62; number examined—144 (at conferences, 7; in their homes, 137); visits to conferences—113.

Conferences conducted by nurses, no physician present—536; children inspected—3,521; mothers instructed in prenatal care—87; visits to conferences by children—7,738; visits by mothers—1,057. In addition 2,305 children were inspected individually in the nurses' offices, and 295 mothers were similarly instructed in prenatal care.

Parents had 794 defects corrected in the children inspected by nurses.

Dental conferences—65; expectant mothers receiving dental examination—73; preschool children receiving dental examination—2,172.

New permanent child-health centers—20 established as a result of the maternity and infancy work. They are supported by county funds and maternity and infancy funds.

Classes for girls in care of infants and preschool children—104 organized; girls enrolled—2,342; number completing course—1,301; lessons in course—12.

Classes for mothers—53 organized; mothers enrolled—932; number completing course—267; lessons in course—12.

Classes for midwives—15 organized; midwives enrolled plus those carried over from previous year—918; number completing course—65; lessons in course—10.

Home visits by nurses—13,582 (prenatal cases seen, 1,336; obstetrical cases, 260; postnatal cases, 722; infants, 3,072; preschool children, 5,146).

Maternity homes inspected—45; inspections made—75.

Infant homes inspected—199; inspections made—227.

Group demonstrations—1,492, on various phases of maternal and child care, to groups of mothers, midwives, teachers, and children.

Campaigns—6: (1) For promotion of birth registration, state-wide. (2) For observance of May Day as Child Health Day, in 9 counties. (3) For examination of preschool children and correction of their defects before the children should enter school, in 28 counties. (4) For vaccination against smallpox, immunization against diphtheria, and inoculation against typhoid fever, in 8 counties. (5) For improvement in sanitation, important in reducing infant mortality, in 5 counties. (6) For enumeration of midwives, in 17 counties.

Talks and lectures—424.

Literature prepared—outline of study courses on care of the expectant mother.

## Activities—Continued.

Literature distributed—66,536 pieces.

Nutrition classes—11, conducted by county nurses; enrollment—197 preschool children.

Exhibits conducted—28; additional exhibits were conducted by the county nurses. Exhibit material prepared—4 sets of charts showing the types of literature distributed by the State department of health. Exhibit material was lent sixty-five times.

Breast feeding was emphasized in health clubs taught by the county nurses. Infants born in the State during the year—92,170 reported; infants under 1 year of age reached by the work of the bureau—43,220; preschool children reached—20,494; expectant mothers reached—7,381.

The bureau sends letters to parents of all infants whose births are registered in the State bureau of vital statistics, advising them that literature on child care may be had upon request.

Counties in the State—254; counties in which maternity and infancy work was done during the year—60; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—115.

Since the beginning of the State's cooperation under the maternity and infancy act two counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

The bureau organized a State health council, outlined the organization of county health councils for organizations interested in health work, and distributed outlines for study courses to these groups.

The following organizations cooperated in the bureau's work: State medical association and auxiliary, State league of women voters, State dental association, American Legion and auxiliary, Women's Legislative Council, and parent-teacher associations. The State dental association made a survey that included preschool children. The auxiliary of the State medical association organized child-health councils and parent teacher association study circles. Other assistance was given in conducting the birth-registration campaign and in securing the cooperation of county public-health nurses. Among the children examined at child-health conferences reported in the foregoing paragraphs, 1,231 were examined in the "Get ready for school" campaign sponsored by the National Congress of Parents and Teachers.

Among the outstanding features of the year's work were the results accomplished in the campaign conducted in cooperation with the parent-teacher associations.

## TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene was established in the State department of health in 1919. The governor accepted the provisions of the maternity and infancy act on February 20, 1922. This was followed by legislative acceptance approved by the governor on February 24, 1923.

A medical director has been in charge of the work of the bureau. Maternal and infant welfare has been promoted through the activities of a number of county nurses who are paid in part from maternity and infancy funds, and a relatively small central staff of nurses. Two negro itinerant nurses who work with the negro midwives and with other persons among their own race are on the State staff.

Both county and State workers had the benefit of cooperation from the State medical society and its auxiliary and the State dental association, the American Legion and its auxiliary, women's organizations, parent-teacher associations, and home demonstration agents.

Notable features of the work have been the establishment of many new permanent child-health centers, increase in the dissemination of information on prenatal care through the distribution of the pamphlet prepared on that subject, state-wide campaigns for the promotion of birth and death registration and for improvement in the milk supply and in sanitation, the great increase in 1928 in the number of counties in which maternity and infancy work was done, the "Get ready for school" campaign, and the assumption by two counties of the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

In 1921 the State legislature passed a law requiring the use of nitrate of silver in the eyes of the newborn. Since the State has cooperated under the maternity and infancy act 3,697 midwives have received instruction which has included directions for the use of nitrate of silver as well as information concerning the importance of birth registration.

As the State is not in the United States birth-registration area no statement as to maternal and infant mortality rates can be made.

## UTAH

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, bureau of child hygiene, Salt Lake City.

Funds expended: Federal, \$13,000; State, \$1,080.59 (for first half of fiscal year only); total, \$14,080.59.

#### Staff:

Director (physician), 1 nurse, 1 dentist, 1 vital-statistics clerk, 1 stenographer. Four physicians were employed as needed to conduct conferences. Four county nurses and one county health officer were paid in part from maternity and infancy funds.

Volunteer assistants—approximately 1,000 physicians, nurses, dentists, and lay persons.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians—526; expectant mothers registered—180; infants and preschool children registered—10,927; children examined—10,900; visits to conferences by expectant mothers—184; visits by infants and preschool children—13,633.

Defects found in children examined at conferences—18,799; children having defects—8,923. Parents had defects corrected in 2,056 of the children.

Dental conferences—125; expectant mothers receiving dental examination—29; preschool children receiving dental examination—2,885. In addition 116 children were given dental examination outside conferences.

New permanent combined prenatal and child-health centers—33 established as a result of the maternity and infancy work. They are supported by local funds.

Classes for mothers—3 organized; mothers enrolled plus those carried over from previous year—192; number completing course—158.

Home visits by nurses—1,900 (prenatal cases seen, 165; obstetrical cases, 11; postnatal cases, 21; infants, 493; preschool children, 1,039).

Maternity homes inspected—5; inspections made—9.

Group demonstrations—122, of various phases of maternal and child care.

Campaigns—3: (1) For examination of preschool children and correction of their defects before they should enter school. (2) For observance of May Day as Child Health Day. (3) For immunization against diphtheria and vaccination against smallpox. Assistance was given in this campaign, which was conducted by the State board of health.

Talks and lectures—297.

Literature prepared—Infantile Paralysis, Epidemic Cerebrospinal Meningitis.

Literature distributed—25,000 pieces.

New names registered for prenatal letters—665; prenatal letters distributed—429 sets.

Nutrition work was done through instruction given to groups of mothers at many of the child-health conferences and to individual mothers of children having nutritional defects.

Exhibit conducted—1, at the State fair, including films, posters, patterns for layette and baby clothes, with demonstrations of feeding methods, dental care, and immunization against diphtheria. Exhibit material prepared—posters, clothing for mother and baby. Exhibit material was lent twelve times.

Breast feeding was promoted by instruction given to mothers at conferences and by literature distributed.

Infants born in the State during the year—approximately 13,500; infants and preschool children reached by the work of the bureau—approximately 25,000; expectant mothers reached—1,010.

## Activities—Continued.

The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—29; counties in which maternity and infancy work was done during the year—25; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—28.

Since the beginning of the State's cooperation under the maternity and infancy act one county has assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

As a result of the bureau's work a number of communities in 11 counties conducted 144 child-health conferences without assistance from the State staff; 1,857 infants and preschool children were given physical examination; the total number of examinations made was 2,942, and the number of corrections of physical defects reported was 234.

The bureau rendered supervisory assistance to local organizations conducting maternity and infancy work.

Prominent church relief societies and the parent-teacher association cooperated in the bureau's work. They assisted at health centers and at dental conferences, lent maternity bundles, and helped to secure the names of expectant mothers.

The outstanding achievement of the year was the number of corrections reported of physical defects found in children examined at health conferences.

## TYPES OF WORK AND SOME RESULTS

The bureau of child hygiene was established in the State board of health in 1922. The governor accepted the provisions of the maternity and infancy act on January 23, 1922. This was followed by legislative acceptance approved by the governor on February 28, 1923.

A medical director has had charge of the work, assisted in the field by a nurse and a dentist. Maternity and infancy funds have been used to assist in maintaining county health units, in which both county health officers and county nurses have promoted maternal and infant welfare. Valuable cooperation has been given by the parent-teacher association, church relief societies, and a farm organization.

Numerous child-health conferences have been conducted in the full-time county health units and by the director of the bureau. Many permanent combined prenatal and child-health centers have been established, at which return and regular conferences were held. A large number of dental conferences also have been held in the last two years.

Infant mortality rates show a downward trend from 1922 to 1927. The lowest infant mortality rate ever recorded in the State was reached in 1927, when 54 infants under 1 year of age died in every 1,000 born alive. In 1922 (the year in which cooperation with the Federal Government was begun) the rate was 69; that is, 15 more babies died in every 1,000 born alive in 1922 than died in 1927.

Maternal mortality rates showed a downward trend from 1922 to 1926, inclusive, but 1927 was marked by a rise in this rate.

## VERMONT

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of public health, Burlington.

Funds expended: Total, \$5,000 (all Federal).

#### Staff:

Director (physician, State health officer serving), 1 nurse, 1 stenographer.

#### Activities:

Child-health conferences conducted by physicians—22; infants and preschool children registered and examined—638; visits to conferences—649.

Defects found in children examined at conferences—957; children having defects—455.

Classes for girls in care of infants and preschool children—5 organized; girls enrolled and completing course—55; lessons in course—5.

Talks and lectures—36. Many of these were illustrated by slides.

Literature distributed—7,692 pieces.

Breast feeding was stressed in the literature distributed and in all talks on infant care.

Infants born in the State during the year—7,312; infants under 1 year of age reached by the work of the department—98 at conferences, 7,073 by birth certificates; preschool children reached—589.

The department sends literature on infant hygiene to parents of infants whose births are registered in the State bureau of vital statistics when the parents request it from the list of available literature sent to them.

Counties in the State—14; counties in which maternity and infancy work was done during the year—13.

The following organizations cooperated in the department's maternity and infancy work: Federated women's clubs, parent-teacher associations, mothers' clubs, and home-bureau groups. They assisted at conferences and lectures and helped to bring the maternity and infancy work to the attention of the public.

### TYPES OF WORK AND SOME RESULTS

The governor accepted the provisions of the maternity and infancy act on January 24, 1922, but the Federal allotment of \$5,000 was returned to the Federal Treasury. Three years later the State again accepted the provisions of the act, through legislative enactment approved by the governor on February 20, 1925. Official action has not been taken to create a child-hygiene division or bureau in the State department of health.

The maternity and infancy funds available in the State are administered directly by the State health officer, who directs the maternity and infancy work with a staff consisting of a nurse and a stenographer.

The program has not been continuous. In the first full year of the State's cooperation under the act a nurse conducted a demonstration in a limited number of rural communities. This was followed by a state-wide educational program and an increasing number of child-health conferences. The sending of a birth-registration certificate, together with a letter offering literature and advice, to the parents of every infant whose birth was registered was one phase of the educational program. The year 1928 was marked by an expanding program in maternal and child hygiene.

Cooperation has been maintained with women's organizations, the parent-teacher association, and home-bureau groups. The home-bureau groups frequently arranged for the child-health conferences and lent their officers to sponsor them.

Usually the effects of a health program are cumulative and are not at once apparent, and Vermont is no exception to this rule.

There has been a slight decline in infant mortality during the State's brief period of cooperation. The infant mortality rate in 1925 was 72 (deaths of infants under 1 year of age per 1,000 live births); in 1927 the rate was 70.

The maternal mortality rate has not declined during the period 1925 to 1927. In 1925 it was 67.9 (deaths of mothers from puerperal causes per 10,000 live births), and in 1927 it was 72.6.

## VIRGINIA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, bureau of child health, Richmond.

Funds expended: Federal, \$25,574; State, \$20,574; total, \$46,148.

#### Staff:

Director (physician), 1 physician, 3 dentists (part year), 3 nurses (1 part year), 1 midwife supervisor (nurse), 1 supervisor of mothers' correspondence course (nurse), 4 stenographers, 3 clerks. Temporary assistants were employed as needed. Fifty county nurses and ten city nurses were paid in part from maternity and infancy funds.

#### Activities:

Child-health conferences conducted by physicians—146; infants and preschool children registered and examined—2,979. Many local physicians cooperated by making examinations at these conferences. As it was not possible to examine all school entrants at the conferences conducted by the bureau an endeavor had been made in 1926 to interest parents in taking their children to a private physician for a physical examination before the child should enter school. The cooperation of superintendents of schools, physicians, and parents had been enlisted and the experiment tried on a small scale. The same plan was followed in four counties and one city in the summer of 1927, with the result that about one-third of the school entrants in three counties, more than nine-tenths in another county, and approximately one-half of the school entrants in the city were examined.

Defects found in children examined at conferences—5,207; children having defects—2,500. Emphasis was placed on the examination of children who would enter school for the first time in the coming fall, so the majority of the children examined were 5 and 6 years of age. The dentists made dental examination of 1,443 children at these conferences.

Conferences conducted by nurses, no physician present—342; children inspected—4,167; mothers instructed in prenatal care—1,609; visits to conferences by children—4,305.

New permanent child-health centers—13 established as a result of the maternity and infancy work. They are supported by maternity and infancy funds and by local organizations.

Classes for girls in care of infants and preschool children—42 organized; girls enrolled—1,447; number completing course—94; lessons in course—10 to 32.

Classes for mothers—23 organized; mothers enrolled—478; lessons in course—10 to 32.

Classes for midwives—40 organized, in 20 counties; midwives enrolled—254; lessons in course—8. The midwife supervisor conducted classes in 8 counties and assisted nurses in conducting classes in 12 additional counties.

Home visits by nurses—118,576 (prenatal cases seen, 1,444; postnatal cases, 1,337; infants, 4,137; preschool children, 8,328).

Maternity homes inspected—4; inspections made—4.

Community demonstration—1, of a maternity and infancy public health nursing program, in 3 counties.

Survey—1, state-wide, of hospital facilities available for maternity care. The bureau is cooperating in a study of maternal mortality being conducted in the State by the United States Children's Bureau with the indorsement of the State medical society.

Talks and lectures—131.

Literature prepared—Feeding the Infant, The Baby (revised).

Literature distributed—228,836 pieces.



## Activities—Continued.

A correspondence course for mothers was conducted, for which 1,812 women enrolled during the year (plus 823 carried over from previous year); lessons in course—12, divided into two sections, for either of which women may register if they do not wish to take the whole course; number of women completing 12 lessons—435; many others completed one of the 6-lesson sections.

Two institutes for "doctors' helpers" were conducted, one at the University of Virginia (for white women), one at the Virginia Normal and Industrial Institute (for colored women). The daily 5-hour sessions were divided into periods of two hours for maternity and infant care, two hours for demonstrations in home nursing, and one hour for personal hygiene. Physicians from the University of Virginia Medical School and local physicians in Petersburg cooperated by giving lectures. Attendance—55 (15 white women, 40 colored women).

The bureau cooperated in parents' institutes held in six communities under local auspices.

Statistical study made—infant mortality, 1917–1922, as compared with that of 1922–1927, in 23 counties.

Breast feeding was emphasized through instruction given to mothers by the nurses, through a paper on the subject presented to the State medical society, and through use of a breast-feeding slogan on the bureau's stationery.

The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—100; counties in which maternity and infancy work was done during the year—54; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—97.

Since the beginning of the State's cooperation under the maternity and infancy act one county has assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

The following organizations cooperated in the bureau's work: State league of women voters, advisory committee of the State medical society, Virginia Polytechnic Institute (home-economics extension service), Cooperative Education Association, and the American Red Cross.

An outstanding feature of the year's program was the furtherance of the work made possible through the cooperation of local physicians and of the advisory committee of the State medical society.

## TYPES OF WORK AND SOME RESULTS

The bureau of child health was established in the State department of health in 1918. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on February 27, 1922.

The same medical director has been in charge of the work during the entire period of cooperation with the Federal Government. A small central staff consisting of an additional physician and three nurses has conducted the general field work the past few years.

Maternity and infancy funds have been granted to counties and communities to assist with the salary and expenses of public-health nurses who have given part of their services to maternity and infancy work. Forty to 50 nurses have been thus employed in counties and 10 in cities in 1927 and 1928.

The bureau has had the advantage of cooperation by the State medical society, the Virginia Polytechnic Institute, and the Cooperative Education Association (through its division superintendents), the American Red Cross, and the State league of women voters.

Because 60 public-health nurses were contributing some services to the maternity and infancy work during 1928 their visits to homes of mothers and infants were especially prominent in the maternity and infancy program of the State. Instruction to special groups, mothers' correspondence courses, classes for midwives, and institutes for "doctors' helpers" disseminated further information on maternal and child care.

Literature on infant care, including that sent to parents of all infants whose births were registered, has reached an increasing number of persons within the past few years.

The study of maternal mortality sponsored by the State medical society, which is being made in the State by the United States Children's Bureau with the cooperation of the State bureau of child health, is expected to furnish valuable information.

The infant mortality rate has fluctuated during the period 1922 (the first year of the State's cooperation under the act) to 1927, the rate in 1927 (75 per 1,000 live births) being slightly lower than that in 1922 (77).

The maternal death rate shows a material decrease, the 1927 rate being the lowest since Virginia was admitted to the United States birth-registration area. The rates for both white and colored mothers were lower in 1927 than in 1922. The rates for both urban and rural areas were also lower in 1927 than in 1922 (6.9 per cent lower for urban areas and 19.1 per cent lower for rural areas), as is shown by the following figures:

*Maternal mortality rates (deaths of mothers from puerperal causes per 10,000 live births)*

	1922	1927
State-----	71.8	61.5
White-----	58.3	47.9
Colored-----	101.7	93.6
Urban-----	111.9	104.2
Rural-----	61.2	49.5

## WASHINGTON

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, division of public-health nursing and child hygiene, Seattle.

Funds expended: Total, \$5,000 (all Federal).

#### Staff:

Director (nurse, not paid from maternity and infancy funds), 1 stenographer, 1 clerk (part time). Twelve physicians were employed as needed to conduct conferences. One county nurse was paid from maternity and infancy funds (half year).

#### Activities:

Child-health conferences conducted by physicians—74; infants and preschool children registered and examined—3,152. Local dentists made dental examinations at these conferences.

Defects found in children examined at conferences—4,788; children having defects—1,979. Parents had approximately two-thirds of the defects corrected.

New permanent child-health centers—9 established as a result of the maternity and infancy work. They are supported by local organizations.

Group demonstrations—at about a third of the child-health conferences, of layettes, proper foods, preparation of formulas, and the giving of sun baths.

The division is cooperating in a study of maternal mortality being conducted in the State by the United States Children's Bureau with the indorsement of the State medical society.

Campaigns—2: (1) For prevention of diphtheria, in 3 counties. Plans have been formulated for a state-wide campaign for prevention of diphtheria. (2) For vaccination against smallpox, state-wide.

A state-wide May Day program was sponsored by the division, features of which were health demonstrations, lectures, child-health conferences, window displays, and radio talks.

Talks and lectures—90. Some of these were given by pediatricians before county medical societies to emphasize the value of periodic health examinations of children and were intended to stimulate local communities to conduct child-health conferences at regular intervals.

Literature distributed—18,114 pieces.

A 15-lesson correspondence course for mothers was conducted through the extension bureau of the State university; mothers registered (including 48 carried over from previous year)—126.

Nutrition work was done through instruction to individual mothers at conferences. The extension service of the State agricultural college co-operated in the nutrition work, specialists conducting a number of nutrition classes for mothers of preschool children.

Exhibits conducted—approximately 55, on nutrition, sanitation, and hygiene, at fairs and child-health conferences. The motion-picture film Sun Babies was shown twenty-eight times. Exhibit material was lent fourteen times.

Breast feeding was stressed in all conferences and lectures. Information in regard to feeding was secured for 1,507 of the infants examined at the conferences: 44 per cent were breast fed, 33 per cent partly breast fed, and 24 per cent artificially fed.

Infants born in the State during the year—23,343; infants under 1 year of age reached by the work of the division—1,106 (exclusive of those reached by literature distributed); preschool children reached—2,046 (exclusive of those reached by literature distributed).

## Activities—Continued.

Counties in the State—39; counties in which maternity and infancy work was done during the year—25; counties in which maternity and infancy work has been done since acceptance of the maternity and infancy act—33. Since the beginning of the State's cooperation under the maternity and infancy act five counties have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

As a result of the division's work three weight and measurement clinics conducted by lay groups supervised by nurses were established, classes in infant feeding were begun in connection with weight and measurement clinics in several counties, courses of lectures for mothers were given in three cities, and classes for mothers were conducted in two rural communities.

The following organizations cooperated in the division's work: State agricultural college, State medical association, American Red Cross, State federation of women's clubs, parent-teacher associations, and preschool circles. Their cooperation consisted largely of sponsoring child-health conferences or assisting with them.

Among the outstanding features of the year's work were the campaigns for prevention of diphtheria and smallpox, the initiation of a study of maternal mortality in cooperation with the United States Children's Bureau, and lectures by pediatricians before county medical societies.

## TYPES OF WORK AND SOME RESULTS

The division of public-health nursing and child hygiene was established in the State department of health in 1920. The State accepted the provisions of the maternity and infancy act through legislative enactment approved by the governor on March 16, 1923.

During the first few years of cooperation with the Federal Government a physician directed the work of the division. Later a nurse served as director. Prominent pediatricians have been employed on a part-time basis to conduct child-health conferences and to lecture to county medical societies on maternal and infant hygiene. Nurses paid from maternity and infancy funds have been detailed to counties in a generalized nursing service. This has resulted in the assumption by five counties of the maintenance of this type of nursing service.

The division has had the benefit of cooperation from the State university and the State agricultural college, the American Red Cross, the State medical association, women's organizations, and parent-teacher associations.

The major feature of the child-hygiene program has been the development of interest in infant and child care through child-health conferences and through visits to mothers, infants, and preschool children by the public-health nurses.

The effect of the program is reflected in the decline of the infant mortality rates. The rate for 1927 was the lowest the State has had since it entered the birth-registration area (in 1917). In 1922, the year before cooperation under the maternity and infancy act, 62 babies under 1 year of age died in every 1,000 born alive, whereas in 1927 the rate was 50, a saving of 12 babies in every 1,000 born alive in 1927 compared with 1922.

The maternal mortality rate has fluctuated from year to year. In 1922 the rate was 78.8 (puerperal deaths per 10,000 live births), whereas in 1927 the rate was 66.5. The lowest rate (60.2) was that of 1925. In no year since the State's cooperation under the maternity and infancy act has the death rate from puerperal causes been so high as it was in 1922. Information furnishing a basis for further effort toward reduction of maternal mortality will no doubt be forthcoming from the study of maternal mortality now in progress in the State.

## WEST VIRGINIA

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of health, division of child hygiene and public-health nursing, Charleston.

Funds expended: Federal, \$18,414.42; State, \$14,871.74; total, \$33,286.16.

#### Staff:

Director (nurse, part time), 1 nurse, 1 vital-statistics field worker, 1 vital-statistics clerk, 1 auditor (2 months, part time), 1 stenographer, 1 clerk. Twenty-two county nurses in 16 counties were paid in full or in part from maternity and infancy funds.

#### Activities:

Child-health conferences conducted by physicians—454; infants and preschool children registered and examined—3,557; visits to conferences—5,516.

New permanent child-health centers—21 established as a result of the maternity and infancy work. They are supported by Federal, State, and county funds.

Classes for girls in care of infants and preschool children—83 organized; girls enrolled—1,212; number completing course—351 (report incomplete); lessons in course—12 to 16.

Classes for mothers—53 organized; mothers enrolled plus those carried over from previous year—1,507; number completing course—more than 335 (report incomplete); lessons in course—4 to 12.

Home visits by nurses—12,814 (prenatal cases seen, 1,428; obstetrical cases, 72; postnatal cases, 1,309; infants and preschool children, 6,308).

Group demonstrations—320, of various phases of maternal and infant care.

Surveys—2: (1) Cost of medical care. (2) Community health conditions affecting children.

Campaigns—5: (1) For clean milk supply. (2) For examination of preschool children and correction of their defects before the children should enter school. (3) For observance of May Day as Child Health Day. (4) For immunization against diphtheria and scarlet fever, inoculation against typhoid fever, and vaccination against smallpox. (5) For early diagnosis of tuberculosis.

Talks and lectures—696.

Literature prepared—prenatal letters, form for community-health survey, outline for organization of child-health conferences, outline for organization of nutrition work, score sheet for nutrition program.

Literature distributed—74,583 pieces.

New names registered for prenatal letters—1,677; prenatal letters distributed—1,285 sets.

A correspondence course for mothers was conducted, for which 6,344 women were enrolled (plus 7,206 carried over from previous year). The course consisted of letters and literature concerning the prenatal and preschool periods sent at intervals; it differed from the usual correspondence course in that answers to questions were not sent in by the mothers. When expectant mothers register for the course they are sent first a series of five prenatal letters a week apart. Many of the full-time county health officers send letters to parents of newborn infants upon receipt of birth certificates, offering to enroll the mothers for this course.

Nutrition work was done through nutrition classes and individual work with mothers, through the motherhood correspondence course, and in home visits. Plans have been made to launch a state-wide nutrition program in cooperation with other State agencies.

Exhibits conducted—2. The division was also represented in 5 exhibit conducted by the bureau of public-health education of the State department of health. Exhibit material was lent 8 times.

## Activities—Continued.

Statistical studies made—maternal and preschool-child deaths, by counties; public health nursing activities; women enrolled for motherhood correspondence course, by counties.

Breast feeding was emphasized in talks and lectures given and in literature distributed.

Infants born in the State during the year—approximately 45,000; infants and preschool children reached by the work of the division—approximately 16,000; expectant mothers reached—approximately 3,100.

Counties in the State—55; counties in which maternity and infancy work was done during the year—39; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—50.

Since the beginning of the State's cooperation under the maternity and infancy act one city has assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

As a result of the division's work farm women's clubs organized and conducted child-health conferences throughout eight counties. Local physicians made the examinations, and a nurse from the division's staff assisted at the conferences.

The division rendered advisory and supervisory assistance to local organizations upon request.

The following organizations cooperated in the division's work: State department of education, State university (extension division), State tuberculosis association, State league of women voters, farm women's clubs, and the parent-teacher association.

## TYPES OF WORK AND SOME RESULTS

The division of child hygiene and public-health nursing was established in the State department of health in 1919. The governor accepted the provisions of the maternity and infancy act on February 6, 1922. This was followed by legislative acceptance approved by the governor on April 13, 1923.

The same nurse has directed the work of the division during the entire period of cooperation, with the assistance of one or more nurses and clerical workers. An increasing number of public-health nurses (22 in 1928) have been detailed to counties and paid from maternity and infancy funds in proportion to the amount of time given to maternity and infancy work.

Cooperation has been maintained with other branches of the State government (the department of education and the State university), with the State tuberculosis association, women's organizations, and the parent-teacher association.

Emphasis was placed on child-health conferences, classes for mothers in infant and maternal care, classes for girls in infant care, motherhood correspondence courses, establishment of centers, and extension of work through the development of county health departments and placing of county nurses.

Nitrate of silver for use in the prevention of ophthalmia neonatorum has been distributed free by the use of maternity and infancy funds since 1926.

The division has assisted in campaign work for the State's admission to the United States birth and death registration areas, which was accomplished in 1925. The infant mortality rate was 80 in 1925 and 72 in 1927; that is, 8 fewer babies died in every 1,000 born alive in 1927 than in 1925. The maternal mortality rate (puerperal deaths per 10,000 live births) for the State as a whole was 61.5 in 1927 as compared with 63.3 in 1925. The rate in rural areas was 50.8 in 1925 and 46.8 in 1927; in urban areas the rate was 117.7 in 1925 and 130.3 in 1927.

## WISCONSIN

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State board of health, bureau of child welfare and public-health nursing, Madison.

Funds expended: Federal, \$29,303.55; State, \$22,751.62; total, \$52,055.17.

#### Staff:

Director (physician), 4 physicians (1 part year), 4 nurses, 1 organizer of infant-hygiene courses (part year), 1 demonstrator of infant-hygiene classes, 1 publicity editor (part year), 1 vital-statistics field worker, 2 vital-statistics clerks (part year), 1 bookkeeper and filing clerk, 1 silver-nitrate clerk (part year), 1 general clerk, 2 stenographers. One county nurse was paid in part from maternity and infancy funds.

Volunteer assistants—28 physicians, 171 nurses, 162 lay persons.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians—434; expectant mothers registered and examined—272; infants and preschool children registered and examined—6,824; visits to conferences by expectant mothers—303; visits by infants and preschool children—11,437.

Defects found in children examined at conferences—8,123; children having defects—6,065. Parents had defects corrected in approximately one-third of the children.

New permanent combined prenatal and child-health centers—20 established as a result of the bureau's maternity and infancy work. They are supported by local, State, and maternity and infancy funds. Six of these centers were the outgrowth of demonstration child-health conferences conducted periodically by the bureau.

The promotion of infant-hygiene courses in the schools of the State has been continued. Two workers gave full time to this activity (one for half the year only). Demonstration courses were given in selected schools, and wherever the teacher approved boys as well as girls were included in the classes. Demonstration classes were given also before rural mothers' clubs, and the clubs in turn sponsored the introduction of the course in the schools in their respective communities. The course is given in many of the schools of the State, and as in former years the State board of health issued certificates to pupils completing the course. During the year 4,901 pupils completed the course in schools that reported to the State board of health. Certificates are not issued to students above high-school grades.

Home visits by nurses—1,110 (prenatal cases seen, 48; postnatal cases, 53; infants, 464; preschool children, 1,264).

Community demonstration—1, of prenatal care and care of the preschool child in a public health nursing program, covering 1 county.

Group demonstrations—295, to students, teachers, women's clubs, and other groups, on various phases of infant and preschool-child care.

Surveys—2: (1) Of birth registration, state-wide. From November, 1927, a field worker covered the State, county by county. Local registrars, clergymen, and newspaper editors were interviewed, and the importance of birth registration was stressed. (2) Of maternal mortality. In September, 1927, the State medical society passed a resolution indorsing a proposed intensive study of maternal deaths. One physician was detailed to give full time to this work, which was begun late in February, 1928. By the close of the fiscal year 172 deaths had been studied.

Talks and lectures—143.

Literature prepared—pamphlets on goiter (revised), diet charts, prenatal letters.

Literature distributed—413,191 pieces.

## Activities—Continued.

New names registered for prenatal letters—2,390; prenatal letters distributed—3,168 sets.

Exhibits conducted—6, consisting of layettes, literature, and posters at the State fair and five county fairs. Exhibit material prepared—spot maps, graphs.

Breast feeding was stressed in individual instruction to mothers at health centers, in lectures, and in the literature that was sent to parents with each birth-registration card. About 90 per cent of the children who attended the health centers were breast fed.

Infants under 1 year of age reached by the work of the bureau—62,630; preschool children reached—5,343; expectant mothers reached—3,488.

The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—71; counties in which maternity and infancy work was done during the year—66; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—71.

Since the beginning of the State's cooperation under the maternity and infancy act 22 counties and communities have assumed the responsibility for maternity and infancy work begun with maternity and infancy funds.

As a result of the bureau's work many permanent child-health centers were established by local agencies, and county-wide campaigns for the prevention of goiter and diphtheria were begun in a number of counties.

The following organizations cooperated in the bureau's work: State federation of women's clubs, State federation of colored women's clubs, State league of women voters, the American Red Cross, and the parent-teacher association. These organizations helped to finance permanent health centers and referred names of mothers to the bureau for prenatal instruction.

Among the outstanding achievements of the year were the securing of continued local support for health centers already established and the arrangement with local communities to assume responsibility for other centers which had previously been operated by the bureau.

## TYPES OF WORK AND SOME RESULTS

The bureau of child welfare and public-health nursing was established in the State board of health in 1919. The governor accepted the provisions of the maternity and infancy act on December 22, 1921. This was followed by legislative acceptance approved by the governor on May 18, 1923.

The program of maternal and infant welfare is conducted by a State staff of physicians, nurses, and other workers. Cooperation has been given by local lay groups and by various state-wide organizations of women (both white and colored), the American Red Cross, and the parent-teacher association. Cooperation between the State departments of health and of public instruction has made possible the introduction of courses of infant hygiene in the curriculum of the public schools. One or two organizers or instructors from the staff of the bureau of child welfare and public-health nursing have been detailed to organize the classes in the schools and to give instruction in infant care to teachers who conduct the course. A special effort has been made to include the work in both graded and rural schools.

Early in the history of the State administration of maternity and infancy funds a "child-welfare special," or health truck, was placed in the field to carry a physician and nurse who would examine children and disseminate information on child and maternal care in the rural districts. The special was retired from service in October, 1927. This itinerant service, together with the organizing and conducting of demonstration centers by the State staff, has resulted in the establishment of many permanent child-health and prenatal centers, some of which are now supported by local funds. The number of permanent centers organized has increased each year; 20 were formed in 1928. Cooperation of local women's groups has made their financing possible.

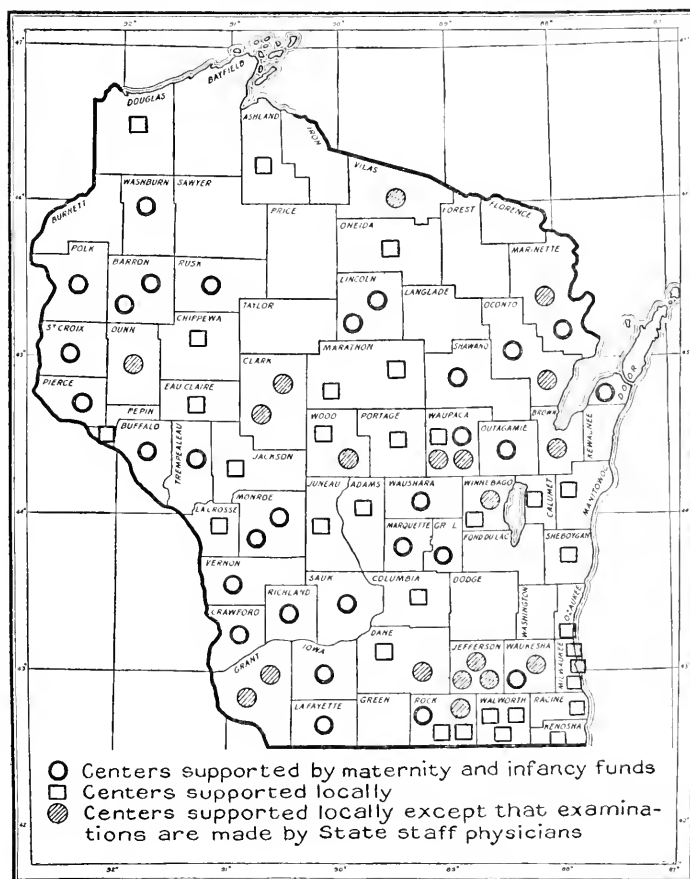
In October, 1927, a study of maternal deaths, indorsed by the State medical society, was begun in the State. The United States Children's Bureau will cooperate in tabulating, analyzing, and publishing the data collected.

The State began free distribution of nitrate of silver for the prevention of ophthalmia neonatorum in 1911, and maternity and infancy funds have been



used to assist in the distribution of this prophylactic since 1923. A survey made before this date showed ophthalmia neonatorum to be the cause of blindness of 25 per cent of the total number of children in the schools for the blind. No survey has been made since, but reports indicate that the number of such cases has decreased at least 75 per cent.

The infant mortality rate in 1917 (the year in which the State was admitted to the United States birth-registration area) was 78 infants under 1 year of age dying in every 1,000 born alive. The infant mortality rate in 1927 was



Distribution of prenatal and child-health centers, by counties;  
Wisconsin, 1927-28

59, the lowest since the State entered the birth-registration area. During the period of operation of the maternity and infancy act the rates have been as follows: 1922, 71; 1923, 70; 1924, 65; 1925, 67; 1926, 69; 1927, 59. Twelve more babies survived to 1 year of age in every 1,000 born alive in the State in 1927 than in 1922, the first year of operation of the maternity and infancy act.

Maternal mortality rates were lower in 1927 than in 1922. For every 10,000 live births in 1922 the number of mothers who died was 56; in 1927 the number of those who died was 53.

## WYOMING

### STAFF AND ACTIVITIES IN 1928

#### Administrative agency:

State department of public health, division of maternal and infant welfare, Cheyenne.

Funds expended: Federal, \$5,057.12; State, \$5,000; total, \$10,057.12.

#### Staff:

Director (State health officer serving), 1 vital-statistics clerk, 1 clerk (part year). Five county nurses were paid from maternity and infancy funds (part year).

Volunteer assistants—49 physicians, 15 dentists, 15 nurses, 66 lay persons.

#### Activities:

Child-health conferences conducted by physicians—54; infants and preschool children registered and examined—1,252.

Defects found in children examined at conferences—631.

Conferences conducted by nurses, no physician present—7; mothers attending—67.

Classes for girls in care of infants and preschool children—10 organized by a nurse lent to the division by the United States Children's Bureau; girls enrolled—147; number completing course—106; lessons in course—6.

Classes for mothers—12 organized by a nurse lent to the division by the United States Children's Bureau; mothers enrolled—463; number completing course—338; lessons in course—6.

Home visits by nurses—3,373 (to prenatal cases, 401; obstetrical cases, 19; postnatal cases, 258; infants, 908; preschool children, 1,208; and follow-up visits to other agencies—579).

Group demonstrations—22, of various phases of maternal and infant care. The State health officer made a special effort to impress upon all persons with whom he came in contact at various health conferences over the State the urgency of immunization against diphtheria, inoculation against typhoid fever, and vaccination against smallpox.

Talks and lectures—150.

Literature prepared—several articles on immunization. These were distributed at conferences and by the nurses.

Literature distributed—approximately 10,900 pieces.

Nutrition work was done through talks and the distribution of literature. Breast feeding was stressed in instruction given at conferences and in home visits.

Infants born in the State during the year—4,456; infants under 1 year of age reached by the work of the division (exclusive of those reached by literature distributed)—908; preschool children reached—1,208; expectant mothers reached—approximately 400.

The nurses working in rural areas checked the registration of births of the infants with whom they came in contact and had births registered and certificates issued for those not registered; they were appointed deputy registrars for this purpose.

The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State—23; counties in which maternity and infancy work was done during the year—22; counties in which maternity and infancy work has been done since the acceptance of the maternity and infancy act—23.

The parent-teacher association and other organizations (not reported by name) cooperated in the division's work.

Among the outstanding features of the year's work were the stressing of the importance of hygiene work for rural children and of the need for immunization against diphtheria, inoculation against typhoid fever, and vaccination against smallpox.

## TYPES OF WORK AND SOME RESULTS

The division of maternal and infant welfare was established in the State department of health in 1922. The governor accepted the provisions of the maternity and infancy act on January 16, 1922. This was followed by legislative acceptance approved by the governor on February 20, 1923.

Changes in the State administration and resulting changes in the personnel of the State department of health have interrupted the continuity of the maternity and infancy program.

Early in 1927 plans were made to cover the State with a nursing service by assigning several counties to each of the nurses, with the exception of one county which had a full-time county unit and to which a nurse paid by maternity and infancy funds had been detailed. Five nurses paid from maternity and infancy funds were assigned to the field work, and a nurse lent by the United States Children's Bureau assisted. The program of work for the nurses included visits in the homes of infants, preschool children, and expectant mothers, arranging for child-health conferences, improving birth registration, giving instruction to classes or groups of girls in infant and child care and to groups of women in infant and prenatal care, and disseminating information on the importance of immunization against diphtheria, vaccination against smallpox, and inoculation against typhoid fever. The five nurses have continued this program in 1928, under the direction of the State health officer.

The division has had the benefit of cooperation from the parent-teacher association, women's clubs, and several other organizations, and of volunteer assistance from a number of professional and lay workers.

The sending of literature on infant care from the division of maternal and infant welfare to parents of all children whose births are registered was continued during 1928.

In 1922, the first year of the State's cooperation under the maternity and infancy act, 79 babies in every 1,000 born alive died in their first year of life; in 1927, 69 died in their first year.

## FEDERAL ADMINISTRATION

### FEDERAL STAFF

The maternity and infant-hygiene division of the United States Children's Bureau, one of its major divisions, was created in 1922 to assist in the administration of the maternity and infancy act. The bureau has kept in touch with the work of the States through reports from the States, staff visits to the States, and the annual conference of directors of the State bureaus and divisions in charge of the local administration of the act. Reports from the States included budgets and plans submitted for approval to the Federal Board of Maternity and Infant Hygiene, an annual report on activities, and semiannual financial reports. Copies of monthly or other reports made by the directors to their respective State health officers also are received from many States.

During the year under review 10 persons (4 physicians, 2 public-health nurses, an auditor, and 3 clerical workers) were regularly employed full time in the maternity and infant-hygiene division. Seven additional physicians were employed as the maternal-mortality study was begun in successive States. (See p. 157).

The physicians on the staff included: (1) The director, who was the executive officer of the division and who gave consulting service to State directors in the field; (2) an associate physician, whose duties included research, consultant service, answering of special correspondence, and preparation of literature and a news-letter; (3) a physician in special charge of details of the maternal-mortality study being conducted by the bureau; and (4) a negro physician, who gave instruction to negro midwives in regard to midwifery procedure and the reporting of births. Two part-time consultants in child hygiene and a part-time consultant in obstetrics were also on the bureau's staff. The public-health nurses advised and assisted in State programs and in campaigns for the promotion of birth registration and did other special pieces of field work as requested by the States. The auditor has audited the accounts of cooperating State agencies. The regular office staff consisted of a secretary and two stenographers.

### CONFERENCE OF STATE DIRECTORS

The fifth annual conference of directors of State bureaus and divisions administering the Federal maternity and infancy act was held at the Children's Bureau in Washington, April 2 to 6, 1928. Representatives attended from 43 cooperating States and the Territory of Hawaii. State health officers were present from five States—Arkansas, Michigan, Oregon, Utah, and Wyoming. In addition to the 35 directors a number of associate directors, supervising nurses, and other members of the State bureaus and divisions were present. Representatives from the three noncooperating States also attended the conference, likewise a number of representatives from private

organizations for the furtherance of child welfare or hygiene or related purposes. The total number of persons present was 82, not including field workers of the maternity and infant-hygiene division who returned to Washington for the conference and other members of the Children's Bureau staff. This annual conference has been extremely valuable in developing a better understanding of maternal and infant hygiene, methods of cooperating with local communities, and methods of interesting parents in better care for their children, also in solving problems of office administration.

The first three days of the conference were devoted to discussion of the following general subjects: Care during delivery and confinement, reduction of the maternal and infant mortality rates in rural areas of certain States, reports on phases of maternity care in two foreign countries, causes and prevention of neonatal mortality, progress of the study of maternal mortality, and general administrative problems. Members of the Children's Bureau's consulting committees on pediatrics and on obstetrics and other prominent physicians, leaders in public health, health officers, and nurses took part in the program and discussions. The papers, some of which have been printed in professional journals, form part of the conference proceedings to be published by the Children's Bureau. A limited number of copies will be available for distribution, also reprints of several of the papers read.

The fourth day of the conference was spent in Philadelphia visiting the Children's Hospital at the invitation of Dr. Howard Childs Carpenter, the representative of the American Child Health Association on the bureau's consulting pediatric committee. The formal part of the program consisted of a lecture and demonstration on prevention of children's diseases and inspection of the well baby, by Doctor Carpenter; a lecture and demonstration on the mental examination of an infant, by Mrs. Dorothy K. Hallowell, psychologist of the Philadelphia Children's Aid Society; and a lecture illustrated with lantern slides on supervision of the health of dependent children, by Mr. J. Prentice Murphy, executive secretary of the Philadelphia Children's Bureau.

The fifth day of the conference was devoted to a round-table discussion in Washington of field and statistical problems connected with the maternal-mortality study. This was participated in by 15 representatives of States and by members of the Children's Bureau staff who are conducting this study in several States.

#### PROMOTION OF BIRTH REGISTRATION

The Children's Bureau has continued cooperation with the National Committee to Aid Completion of the Registration Area before 1930 by assisting in the promotion of birth registration in States having registration campaigns within the year under review. The director of the maternity and infant-hygiene division is a member of the committee, and at the request of the United States Bureau of the Census and of the respective State departments of health the Children's Bureau detailed members of its staff to several States for varying periods. One staff physician assisted in promoting the registration of births attended by negro midwives in Georgia and Texas.

The consulting public-health nurse gave assistance in Oklahoma and later in Texas during nearly half the year under review. A member of the statistical division of the Children's Bureau was lent to Colorado, Oklahoma, and Texas for field work in connection with campaigns for improvement of birth registration in those States.

#### SPECIAL ASSISTANCE TO STATES

Special consulting service from members of the Children's Bureau staff is frequently requested by State bureaus and divisions of child hygiene or welfare. During the year under review a total of 41 visits were made to States by physicians and nurses from the maternity and infant-hygiene division to advise with members of the State staffs regarding the maternity and infancy program or the maternal-mortality study. The director of the maternity and infant-hygiene division spent short periods in Colorado, Idaho, Kansas, Maine, Michigan, Montana, Nebraska, Nevada, New Hampshire, Oregon, Rhode Island, Utah, Washington, West Virginia, and Wyoming, conferring with State administrators and reviewing types of work in these States. Special trips in the interest of maternity and infancy work were made to Illinois, Maryland, New York, Ohio, Tennessee, and West Virginia. The physician in charge of the details of the field work of the maternal-mortality study gave consulting service in Alabama, California, Kentucky, Michigan, Minnesota, Nebraska, Oregon, Virginia, Washington, and Wisconsin. Eight physicians employed for varying periods in the maternal-mortality study were lent to Alabama, Kentucky, Maryland, Nebraska, Oregon, Rhode Island, Virginia, and Washington.

Assistance from the Children's Bureau is frequently sought by individual States for special pieces of work undertaken or under consideration, and several members of the maternity and infant-hygiene division or other divisions of the bureau have been detailed to give service during the past year. One of the consultants in child hygiene assisted in conducting demonstration child-health conferences for a short period in Nevada. Later he conducted demonstration child-health conferences before groups of physicians and local medical societies at 25 points in the State, with an enrollment of 367 physicians; 480 physicians and 80 other visitors were in attendance. Another consultant lectured and assisted at a public-health conference in West Virginia. The consultant in obstetrics conducted a course in obstetrics in Oklahoma for physicians during an entire month. The number of physicians enrolled was 352, the total attendance of physicians was 545, and 131 nurses (and a few other visitors) came for the lectures. The midwife instructor (a negro woman physician) conducted courses of instruction for negro midwives in Georgia and Texas, aided promotion of birth registration in those States, and assisted at the Tuskegee health institute. A staff nurse taught classes for mothers in South Dakota and conducted a demonstration maternity and infancy nursing service (covering several counties) in Wyoming. The consulting public-health nurse gave consulting nursing service in Kansas, North Carolina, North Dakota, South Carolina, Texas, and Vermont and assisted with the birth-registration campaigns in Oklahoma and Texas. A

statistician from the Children's Bureau gave assistance in analysis of maternal and infant mortality figures in Kentucky, North Carolina, and Virginia, and another member of the statistical division's staff assisted in promoting birth registration in Colorado, Oklahoma, and Texas.

Frequent assistance has been received from the bureau's two consulting committees—the pediatric committee and the obstetrical committee—whose members have given generously of their time and thought to various questions of importance arising in connection with investigations undertaken by the bureau (as the maternal-mortality study), publications planned or in preparation, and problems laid before the bureau by individual States.

## RESEARCH AND PUBLICATIONS

### STUDY OF MATERNAL MORTALITY

The study of maternal mortality (for which a plan of work, schedules, and instructions were made in 1926 by the consulting obstetrical committee of the Children's Bureau at the request of the bureau, following discussion of the project at the 1926 conference of directors of State bureaus and divisions of child hygiene) was under way in 12 States during the year under review: Alabama, Kentucky, Maryland, Michigan, Minnesota, Nebraska, New Hampshire, Oregon, Rhode Island, Virginia, Washington, and Wisconsin. Plans for beginning the study after the close of the fiscal year 1928 were adopted in three additional States: California, North Dakota, and Oklahoma. In each of these States the work was undertaken at the request of the State board of health and with the indorsement of the State medical society or association. Facts in the birth and death certificates filed in the State bureaus of vital statistics afford the preliminary data, and the State bureaus are giving generous cooperation in work involved in this phase of the study. Further information is obtained by medical investigators who are interviewing the physician, midwife, or other attendant at birth for every woman who has died in childbirth within the two years selected for the period of the study—January, 1927, to January, 1929. The hospital record is also secured for any of these women having hospital care. In three States the physicians conducting the study are members of the staffs of the State bureau or division of child hygiene; members of the Children's Bureau staff have been assigned to the work in the remaining nine States.<sup>1</sup> Information concerning approximately 7,000 deaths will have been obtained when this investigation is completed. The data will be compiled, analyzed, and published by the Children's Bureau.

### STUDY OF NEONATAL MORTALITY

An investigation to obtain certain basic facts in regard to neonatal deaths is being made for the Children's Bureau. Preliminary study to determine methods and schedules was begun in January, 1928, in cooperation with the pediatric, obstetrical, and pathological depart-

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<sup>1</sup> In California, North Dakota, and Oklahoma physicians from the staffs of the child-hygiene divisions will do the medical interviewing.

ments of the school of medicine of Yale University. At the close of the year under review 100 newborn infants had been examined on the first day of life and reexamined on approximately the third, tenth, fourteenth, and forty-second days. Complete pathological study was made of 8 infants who died within their first 42 days of life. Reexamination at 1 year of age will be made. To facilitate statistical analysis the details of the examinations, together with family, prenatal, natal, and postnatal histories, are being recorded on carefully planned schedules. Effort has been made to include all data that may possibly throw light on any of the obscure illnesses of this period.

#### STUDY OF RICKETS

The material collected in a three-year demonstration of community control of rickets at New Haven, Conn., conducted by the Children's Bureau in cooperation with the pediatric department of Yale University School of Medicine and the New Haven Department of Health has been in process of analysis during the year ended June 30, 1928. Careful study is being made of the significance of the mildest forms of rickets as well as of the more severe and obvious forms in relation to the growth, nutrition, diet, and general health and development of the child. Cod-liver oil and sunlight are being studied in relation to the prevention and control of rickets, and case studies of certain groups of children are being made.

This study has furnished a larger number of röntgenograms showing the centers of ossification in the wrists of children under 5 years of age than have been available for study, and the röntgenograms afford a valuable source for determining more exactly the beginning of the growth of the bone. Therefore in connection with the general analysis the number of ossification centers in the wrist has been studied in relation to age, sex, race (negro or white) height, weight, and rickets.

Statistical analysis is being made of the material obtained in a study of rickets in Porto Rico in January and February, 1927. The tabulation of the material of the clinical and Röntgen examinations and the interviews with the mothers of the 584 children under 3 years of age who were examined is practically completed. As children born in a tropical country and known to live much of the time out of doors and in houses whose windows are unglazed probably receive antirachitic treatment in a natural manner and have as normal bone growth as it would be possible to find, the röntgenograms should establish a standard of normality valuable in the further interpretation of those made in New Haven. The röntgenogram diagnosis for 509 of the children was normal. Marked active rickets was apparent for 1 of the 584 (about half of whom were under 1 year of age). Evidence of very slight rickets definitely under control appeared for three children, and evidence of moderate healed rickets for a fifth child (who until three months before the examination had lived in New York City). For 70 the röntgenogram diagnosis was doubtful. The nutrition of the children was on the whole only fair. The diets of their mothers, as indicated by that on the day before the interview, were found to be generally poor; only 10 per cent were rated as



good, 40 per cent as fair, and 50 per cent as poor or very poor. The inadequacy of the diets of both mothers and children is of interest in view of the almost negligible amount of rickets found among these Porto Rican children. Analysis of the children's growth in relation to diet, rickets, and sunlight is being made and will be included in the report.

#### STILLBIRTHS AND NEONATAL MORTALITY IN MINNEAPOLIS

Tabulation of the findings of approximately 1,000 stillbirths and neonatal deaths in Minneapolis, Minn., is being made by the Children's Bureau in cooperation with the University of Minnesota. The material includes gross and microscopic findings of the autopsies of stillborn infants and of infants who died within the first two weeks of life. The history of the mothers' previous pregnancies is part of the record, as well as the history of the pregnancies resulting in the children that came to autopsy and the details of labor and puerperium. The prenatal care received will be studied in relation to the autopsy findings.

#### RELATION OF POSTURE TO PHYSICAL FITNESS

The report of the 2-year study of the results of posture training in a group of children 5 to 18 years of age made in elementary schools of Chelsea, Mass., has been completed and will be published as one of the bureau's bulletins. These children did not differ from other children in the school except that they were given special training in posture in addition to the regular physical-education exercises in the curriculum. Changes observed in the physical characteristics of the children who received posture training are compared with those found among children of similar nationality and age distribution in other rooms of the same grade of the school who received no special training.

#### CARE OF THE PRESCHOOL CHILD—LESSON MATERIAL

A series of outline lessons on the care of the preschool child for the use of self-directed study clubs, some of which were prepared by the maternity and infant-hygiene division of the bureau and distributed in mimeographed form in the previous year, were issued in convenient printed form during the year under review. In addition to the list of references the set contains nine lesson leaflets on the following subjects: Health examination, physical defects, teeth, nutrition, food likes and dislikes, posture, need of sunshine and open air, behavior, and protection against communicable diseases.

#### NEWS-LETTER

Several news-letters were prepared in mimeographed form and sent at intervals to the State bureaus and divisions of child hygiene or welfare. Included in these news-letters were abstracts of reports of scientific work in fields germane to maternity and infancy work, brief reviews of new publications, items of interest reported by State bureaus and divisions and by the Federal division of maternity and infant hygiene, and news from foreign fields of related work.

## DISTRIBUTION OF PUBLICATIONS

Publications of the Children's Bureau relating to the care and hygiene of mothers, infants, and preschool children are distributed free to persons requesting single copies, and limited numbers are sent to the States for free distribution. During the year under review a total of 1,262,431 popular publications were distributed to mothers. Monthly allotments of Prenatal Care, Infant Care, and Child Care are supplied to State bureaus and divisions of child hygiene or welfare, also to a few county and city boards of health. Many States buy additional copies from the Government Printing Office. From the dates of their publication more than 8,000,000 of these three bulletins and of Child Management—the next most popular bulletin—have been distributed. The bureau's distribution of these bulletins and others of the more widely used publications during the year ended June 30, 1928, was as follows:

*Bulletins.*—Prenatal Care, 159,797; Infant Care, 419,950; Child Care, 144,519; Child Management, 48,473.<sup>2</sup>

*Folders.*—Minimum Standards of Prenatal Care, 46,302; Why Drink Milk? 34,238; What Builds Babies? 59,459; Sunlight for Babies, 94,882; Breast Feeding, 56,711; Keeping the Well Baby Well, 84,775.

*Dodgers.*—Books and Pamphlets on Child Care, 9,150; Is Your Child's Birth Recorded? 12,446; Feeding the Child, 19,452; What Do Growing Children Need? 26,381.

*Small charts.*—Baby's Daily Time Cards, 26,818 sets.

## MOTION PICTURES AND EXHIBIT MATERIAL

The Children's Bureau has posters, motion pictures, film strips for use in automatic and hand projectors, and other exhibit material that may be borrowed. (See p. 179.) During the year 355 shipments of exhibits were sent on request to international, National, State, and local agencies, including the American Medical Association and other medical societies, public-health services, boards of health, child-welfare societies, fraternal societies, educational institutions, Young Women's and Young Men's Christian Associations, the American Red Cross, Boy Scout Troops, Camp Fire Girls, women's clubs, parent-teacher associations, social-service organizations, and State and county fairs.

At the request of the American Medical Association the bureau cooperated with the association in the preparation of a set of 10 colored posters dealing with such subjects as prenatal care, birth registration, breast feeding, care of the baby, and diet. The posters will be distributed by both organizations. Several other new sets of posters were added to the bureau's collection, and permission to reproduce several of the bureau's posters was granted to a number of State tuberculosis associations and educational institutions.

<sup>2</sup> The wide distribution of Infant Care was made possible through a special appropriation for the purpose. The comparatively limited distribution of Child Management was due to its being out of print a part of the year. The orders for sale of these four bulletins by the Government Printing Office in the fiscal year ended June 30, 1928, were as follows: Prenatal Care, 55,000; Infant Care, 130,000; Child Care, 33,500; Child Management, 78,700.

The bureau produced during the year a new 1-reel motion picture, *The Best-Fed Baby*, to illustrate the advantages of breast feeding over artificial feeding. In preparing the scenario and producing the film the bureau had the cooperation of the New York State Board of Health through the director of its division of maternity, infancy, and child hygiene and the assistance of one of its consultants who is a well-known pediatricist. Advice was given also by a pediatricist from Oregon who is an authority on breast feeding. Before being released the film was reviewed at the 1928 conference of State directors of maternity and infancy work. The bureau also produced a new film strip entitled "*The Preschool Days of Betty Jones*," which shows the essentials of care for the preschool child.



## APPENDIXES

### APPENDIX A.—TEXT OF THE ACT FOR THE PROMOTION OF THE WELFARE AND HYGIENE OF MATERNITY AND INFANCY AND OF SUPPLEMENTARY LEGISLATION

[S. 1039—Sheppard-Towner Act; Public 97—67th Congress; 42 Stat. 224]

An Act For the promotion of the welfare and hygiene of maternity and infancy, and for other purposes

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That there is hereby authorized to be appropriated annually, out of any money in the Treasury not otherwise appropriated, the sums specified in section 2 of this Act, to be paid to the several States for the purpose of cooperating with them in promoting the welfare and hygiene of maternity and infancy as hereinafter provided.

SEC. 2. For the purpose of carrying out the provisions of this Act, there is authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, for the current fiscal year \$480,000, to be equally apportioned among the several States, and for each subsequent year, for the period of five years, \$240,000, to be equally apportioned among the several States in the manner hereinafter provided: *Provided*, That there is hereby authorized to be appropriated for the use of the States, subject to the provisions of this Act, for the fiscal year ending June 30, 1922, an additional sum of \$1,000,000, and annually thereafter, for the period of five years, an additional sum not to exceed \$1,000,000: *Provided further*, That the additional appropriations herein authorized shall be apportioned \$5,000 to each State and the balance among the States in the proportion which their population bears to the total population of the States of the United States, according to the last preceding United States census: *And provided further*, That no payment out of the additional appropriation herein authorized shall be made in any year to any State until an equal sum has been appropriated for that year by the legislature of such State for the maintenance of the services and facilities provided for in this Act.

So much of the amount apportioned to any State for any fiscal year as remains unpaid to such State at the close thereof shall be available for expenditures in that State until the close of the succeeding fiscal year.

SEC. 3. There is hereby created a Board of Maternity and Infant Hygiene, which shall consist of the Chief of the Children's Bureau, the Surgeon General of the United States Public Health Service, and the United States Commissioner of Education, and which is hereafter designated in this Act as the Board. The Board shall elect its own chairman and perform the duties provided for in this Act.

The Children's Bureau of the Department of Labor shall be charged with the administration of this Act, except as herein otherwise provided, and the Chief of the Children's Bureau shall be the executive officer. It shall be the duty of the Children's Bureau to make or cause to be made such studies, investigations, and reports as will promote the efficient administration of this Act.

SEC. 4. In order to secure the benefits of the appropriations authorized in section 2 of this Act, any State shall, through the legislative authority thereof, accept the provisions of this Act and designate or authorize the creation of a State agency with which the Children's Bureau shall have all necessary powers to cooperate as herein provided in the administration of the provisions of this Act: *Provided*, That in any State having a child-welfare or child-hygiene division in its State agency of health, the said State agency of health shall administer the provisions of this Act through such divisions. If the legislature of any State has not made provision for accepting the provisions of this Act the governor of such State may in so far as he is authorized to do so by the laws of such State accept the provisions of this Act and designate or create a State agency to

cooperate with the Children's Bureau until six months after the adjournment of the first regular session of the legislature in such State following the passage of this Act.

SEC. 5. So much, not to exceed 5 per centum, of the additional appropriations authorized for any fiscal year under section 2 of this act, as the Children's Bureau may estimate to be necessary for administering the provisions of this act, as herein provided, shall be deducted for that purpose, to be available until expended.

SEC. 6. Out of the amounts authorized under section 5 of this act the Children's Bureau is authorized to employ such assistants, clerks, and other persons in the District of Columbia and elsewhere, to be taken from the eligible lists of the Civil Service Commission, and to purchase such supplies, material, equipment, office fixtures, and apparatus, and to incur such travel and other expenses as it may deem necessary for carrying out the purposes of this act.

SEC. 7. Within 60 days after any appropriation authorized by this act has been made, the Children's Bureau shall make the apportionment herein provided for and shall certify to the Secretary of the Treasury the amount estimated by the bureau to be necessary for administering the provisions of this act, and shall certify to the Secretary of the Treasury and to the treasurers of the various States the amount which has been apportioned to each State for the fiscal year for which such appropriation has been made.

SEC. 8. Any State desiring to receive the benefits of this act shall, by its agency described in section 4, submit to the Children's Bureau detailed plans for carrying out the provisions of this act within such State, which plans shall be subject to the approval of the board: *Provided*, That the plans of the States under this act shall provide that no official, or agent, or representative in carrying out the provisions of this act shall enter any home or take charge of any child over the objection of the parents, or either of them, or the person standing in loco parentis or having custody of such child. If these plans shall be in conformity with the provisions of this act and reasonably appropriate and adequate to carry out its purposes they shall be approved by the board and due notice of such approval shall be sent to the State agency by the chief of the Children's Bureau.

SEC. 9. No official, agent, or representative of the Children's Bureau shall by virtue of this act have any right to enter any home over the objection of the owner thereof, or to take charge of any child over the objection of the parents, or either of them, or of the person standing in loco parentis or having custody of such child. Nothing in this act shall be construed as limiting the power of a parent or guardian or person standing in loco parentis to determine what treatment or correction shall be provided for a child or the agency or agencies to be employed for such purpose.

SEC. 10. Within 60 days after any appropriation authorized by this act has been made, and as often thereafter while such appropriation remains unexpended as changed conditions may warrant, the Children's Bureau shall ascertain the amounts that have been appropriated by the legislatures of the several States accepting the provisions of this act and shall certify to the Secretary of the Treasury the amount to which each State is entitled under the provisions of this act. Such certificate shall state (1) that the State has, through its legislative authority, accepted the provisions of this act and designated or authorized the creation of an agency to cooperate with the Children's Bureau, or that the State has otherwise accepted this act, as provided in section 4 hereof; (2) the fact that the proper agency of the State has submitted to the Children's Bureau detailed plans for carrying out the provisions of this act, and that such plans have been approved by the board; (3) the amount, if any, that has been appropriated by the legislature of the State for the maintenance of the services and facilities of this act, as provided in section 2 hereof; and (4) the amount to which the State is entitled under the provisions of this act. Such certificate, when in conformity with the provisions hereof, shall, until revoked as provided in section 12 hereof, be sufficient authority to the Secretary of the Treasury to make payment to the State in accordance therewith.

SEC. 11. Each State agency cooperating with the Children's Bureau under this act shall make such reports concerning its operations and expenditures as shall be prescribed or requested by the bureau. The Children's Bureau may, with the approval of the board, and shall, upon request of a majority of the board, withhold any further certificate provided for in section 10 hereof

whenever it shall be determined as to any State that the agency thereof has not properly expended the money paid to it or the moneys herein required to be appropriated by such State for the purposes and in accordance with the provisions of this act. Such certificate may be withheld until such time or upon such conditions as the Children's Bureau, with the approval of the board, may determine; when so withheld the State agency may appeal to the President of the United States who may either affirm or reverse the action of the bureau with such directions as he shall consider proper: *Provided*, That before any such certificate shall be withheld from any State, the chairman of the board shall give notice in writing to the authority designated to represent the State, stating specifically wherein said State has failed to comply with the provisions of this act.

SEC. 12. No portion of any moneys apportioned under this act for the benefit of the States shall be applied, directly or indirectly, to the purchase, erection, preservation, or repair of any building or buildings or equipment, or for the purchase or rental of any buildings or lands, nor shall any such moneys or moneys required to be appropriated by any State for the purposes and in accordance with the provisions of this act be used for the payment of any maternity or infancy pension, stipend, or gratuity.

SEC. 13. The Children's Bureau shall perform the duties assigned to it by this act under the supervision of the Secretary of Labor, and he shall include in his annual report to Congress a full account of the administration of this act and expenditures of the moneys herein authorized.

SEC. 14. This act shall be construed as intending to secure to the various States control of the administration of this act within their respective States, subject only to the provisions and purposes of this act.

Approved, November 23, 1921.

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[Public 35—68th Congress; 43 Stat. 17]

An Act To extend the provisions of certain laws to the Territory of Hawaii.

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SEC. 3. The Territory of Hawaii shall be entitled to share in the benefits of the act entitled "An act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," approved November 23, 1921, and any act amendatory thereof or supplementary thereto, upon the same terms and conditions as any of the several States. For the fiscal year ending June 30, 1925, there is authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, the sum of \$13,000 to be available for apportionment under such act to the Territory, and annually thereafter such sum as would be apportioned to the Territory if such act had originally included the Territory.

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Approved, March 10, 1924.

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[Public 566—69th Congress; 44 Stat. 1024]

An Act To authorize for the fiscal years ending June 30, 1928, and June 30, 1929, appropriations for carrying out the provisions of the Act entitled "An Act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," approved November 23, 1921, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That section 2 of the act entitled "An act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," approved November 23, 1921, is amended by striking out the words "for the period of five years" wherever such words appear in such section and inserting in lieu thereof the words "for the period of seven years."

SEC. 2. That said act entitled "An act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," approved November 23, 1921, shall, after June 30, 1929, be of no force and effect.

Approved, January 22, 1927.

## APPENDIX B.—ADMINISTRATIVE AGENCIES AND OFFICERS

*State administrative agencies and names of the executive officers for the administration of the act for the promotion of the welfare and hygiene of maternity and infancy (as of June 30, 1928)*

State (and Territory)	Administrative agency and department	Director
Alabama.....	Bureau of child hygiene and public-health nursing, State board of health (Montgomery).	Jessie L. Marriner, R. N.
Arizona.....	Child-hygiene division, State board of health (Phoenix).	Mrs. Charles R. Howe.
Arkansas.....	Bureau of child hygiene, State board of health (Little Rock).	Dr. C. W. Garrison. <sup>1</sup>
California.....	Bureau of child hygiene, State department of health (San Francisco).	Dr. Ellen S. Stadtmuller.
Colorado.....	Child-welfare bureau, State department of public instruction (Denver).	Mrs. Estelle N. Mathews. <sup>2</sup>
Connecticut <sup>3</sup> .....	Bureau of child hygiene, State department of health (Hartford).	Dr. A. Elizabeth Ingraham.
Delaware.....	Division of child hygiene, State board of health (Dover).	Dr. Cleland A. Sargent.
Florida.....	Bureau of child hygiene and public-health nursing, State board of health (Jacksonville).	Mrs. Laurie Jean Reid, R. N.
Georgia.....	Division of child hygiene, State board of health (Atlanta).	Dr. Joe P. Bowdoin.
Hawaii.....	Division of maternity and infancy, Territorial board of health (Honolulu).	Mabel V. Smyth, R. N.
Idaho.....	Bureau of child hygiene, State department of public welfare (Boise).	Dr. Emily F. Bolcom.
Illinois <sup>3</sup> .....	Division of child hygiene and public-health nursing, State department of public health (Springfield).	Dr. Grace S. Wightman.
Indiana.....	Division of infant and child hygiene, State board of health (Indianapolis).	Dr. Ada E. Schweitzer.
Iowa.....	Division of maternity and infant hygiene, State University of Iowa, State board of education (Iowa City).	Edward H. Lauer, Ph. D.
Kansas.....	Division of child hygiene, State board of health (Topeka).	Dr. J. C. Montgomery.
Kentucky.....	Bureau of maternal and child health, State board of health (Louisville).	Dr. Annie S. Veech.
Louisiana.....	Bureau of child hygiene, State department of health (New Orleans).	Agnes Morris.
Maine.....	Division of public-health nursing and child hygiene, State department of health (Augusta).	Edith L. Soule, R. N.
Maryland.....	Bureau of child hygiene, State department of health (Baltimore).	Dr. J. H. Mason Knox, jr. <sup>4</sup>
Massachusetts <sup>3</sup> .....	Division of hygiene, State department of public health (Boston).	Dr. Merrill E. Champion.
Michigan.....	Bureau of child hygiene and public-health nursing, State department of health (Lansing).	Dr. Lillian R. Smith.
Minnesota.....	Division of child hygiene, State department of health (Minneapolis).	Dr. E. C. Hartley.
Mississippi.....	Bureau of child hygiene and public-health nursing, State board of health (Jackson).	Dr. F. J. Underwood. <sup>1</sup>
Missouri.....	Division of child hygiene, State board of health (Jefferson City).	Dr. Irl Brown Krause.
Montana.....	Child-welfare division, State board of health (Helena).	Dr. Hazel Dell Bonness.
Nebraska.....	Division of child hygiene, bureau of health, State department of public welfare (Lincoln).	Louise M. Murphy, R. N.
Nevada.....	Child-welfare division, State board of health (Reno).	Mrs. S. H. Wheeler. <sup>2</sup>
New Hampshire.....	Division of maternity, infancy, and child hygiene, State board of health (Concord).	Mrs. Mary D. Davis, R. N.
New Jersey.....	Bureau of child hygiene, State department of health (Trenton).	Dr. Julius Levy. <sup>5</sup>
New Mexico.....	Division of child hygiene and public-health nursing, bureau of public health, State department of public welfare (Santa Fe).	Dorothy R. Anderson, R. N. <sup>4</sup>
New York.....	Division of maternity, infancy, and child hygiene, State department of health (Albany).	Dr. Elizabeth M. Gardiner.
North Carolina.....	Bureau of maternity and infancy, State board of health (Raleigh).	Dr. George Collins.



*State administrative agencies and names of the executive officers for the administration of the act for the promotion of the welfare and hygiene of maternity and infancy (as of June 30, 1928)—Continued*

State (and Territory)	Administrative agency and department	Director
North Dakota.....	Division of child hygiene and public-health nursing, State department of public health (Bismarck).	Dr. Maysil M. Williams.
Ohio.....	Division of child hygiene, State department of health (Columbus).	Dr. J. A. Frank. <sup>6</sup>
Oklahoma.....	Bureau of maternity and infancy, State department of public health (Oklahoma City).	Dr. Lucile S. Blachly.
Oregon.....	Bureau of child hygiene, State board of health (Portland).	Dr. Frederick D. Stricker. <sup>1</sup>
Pennsylvania.....	Preschool division, bureau of child health, State department of health (Harrisburg).	Dr. Mary Riggs Noble. <sup>4</sup>
Rhode Island.....	Division of child welfare, State board of health (Providence).	Dr. Marion A. Gleason.
South Carolina.....	Bureau of child hygiene and public-health nursing, State board of health (Columbia).	Ada Taylor Graham, R. N.
South Dakota.....	Division of child hygiene, State board of health (Waubay).	Florence E. Walker, R. N.
Tennessee.....	Division of child hygiene and public-health nursing, State department of public health (Nashville).	Dr. W. J. Breeding.
Texas.....	Bureau of child hygiene, State department of health (Austin).	Dr. H. N. Barnett.
Utah.....	Bureau of child hygiene, State board of health (Salt Lake City).	Dr. H. Y. Richards.
Vermont.....	State department of public health (Burlington).	Dr. Charles F. Dalton. <sup>1</sup>
Virginia.....	Bureau of child health, State board of health (Richmond).	Dr. Mary E. Brydon.
Washington.....	Division of public-health nursing and child hygiene, State department of health (Seattle).	Mrs. Mary Louise Allen, R. N. <sup>4</sup>
West Virginia.....	Division of child hygiene and public-health nursing, State department of health (Charleston).	Mrs. Jean T. Dillon, R. N.
Wisconsin.....	Bureau of child welfare and public-health nursing, State board of health (Madison).	Dr. Cora S. Allen.
Wyoming.....	Division of maternal and infant welfare, State department of public health (Cheyenne).	Dr. W. H. Hassed. <sup>1</sup>

<sup>1</sup> State health officer serving.

<sup>2</sup> Executive secretary.

<sup>3</sup> State not cooperating.

<sup>4</sup> Chief.

<sup>5</sup> Consultant.

<sup>6</sup> Acting chief

# APPENDIX C.—MATERNAL AND INFANT MORTALITY RATES

TABLE I.—*Maternal mortality rates, by States, in urban and rural districts of the United States birth-registration area; 1915-1927*<sup>1</sup>

State	Deaths of mothers from puerperal causes per 10,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Area.....	60.8	62.2	66.2	91.6	73.7	79.9	68.2	66.4	66.5	65.6	64.7	65.6	64.7
Urban.....	64.1	65.1	70.0	96.0	78.8	85.6	77.1	73.2	73.8	73.5	73.5	73.9	74.8
Rural.....	55.3	57.3	62.3	87.2	68.8	74.1	59.4	59.5	58.7	57.6	55.5	56.7	55.3
Alabama.....													79.6
Urban.....													110.2
Rural.....													73.2
Arizona.....												102.5	89.0
Urban.....												107.6	125.2
Rural.....												100.6	74.9
Arkansas.....													89.7
Urban.....													134.5
Rural.....													85.9
California.....					79.8	76.9	68.3	71.9	67.5	59.2	60.1	56.4	57.6
Urban.....					88.1	85.5	78.1	77.1	70.9	62.8	64.9	58.7	61.3
Rural.....					68.7	65.1	55.1	64.9	62.6	54.0	53.1	53.0	52.2
Connecticut.....	56.1	48.9	51.0	74.9	62.2	68.0	52.8	57.0	57.3	57.1	49.1	57.6	55.3
Urban.....	63.0	51.1	55.2	73.5	68.8	74.7	57.7	61.6	61.6	60.3	54.9	59.5	57.2
Rural.....	36.0	42.1	36.9	79.5	41.6	37.6	31.5	37.3	38.5	42.9	21.5	47.9	45.4
Delaware.....							63.2	65.8	83.7	76.9	77.0	92.9	58.6
Urban.....							101.5	60.5	90.0	82.6	102.3	109.4	85.2
Rural.....							20.8	71.7	77.1	70.8	51.5	76.3	32.6
Florida.....										121.4	121.4	106.9	109.9
Urban.....										108.8	130.9	101.4	97.8
Rural.....										126.2	117.2	109.7	115.2
Idaho.....												56.9	60.0
Urban.....												75.1	62.9
Rural.....												54.5	59.6
Illinois.....								63.2	64.1	61.6	58.3	65.0	55.6
Urban.....								66.9	71.0	69.7	64.8	69.8	63.5
Rural.....								57.3	53.2	48.1	46.9	56.1	40.1
Indiana.....			72.5	103.9	84.2	87.5	68.6	66.0	64.9	58.1	60.5	64.8	65.7
Urban.....			87.1	124.3	102.5	104.8	85.7	84.1	77.4	66.0	80.2	81.1	81.1
Rural.....			64.1	91.9	73.0	75.2	56.5	53.2	55.2	51.5	43.9	50.8	52.1
Iowa.....										59.8	55.9	60.4	58.9
Urban.....										79.1	81.3	87.8	89.1
Rural.....										52.2	45.3	48.8	46.0
Kansas.....			75.9	114.3	82.5	84.3	64.3	75.9	68.4	62.7	65.4	69.7	63.1
Urban.....			92.0	151.7	107.5	101.9	85.1	107.7	104.8	82.6	83.2	93.1	84.6
Rural.....			72.4	105.8	76.4	78.6	57.6	64.8	55.0	54.9	58.4	60.7	54.4
Kentucky.....			60.1	80.0	63.2	64.4	62.7	60.7	59.6	61.8	59.5	58.4	49.4
Urban.....			98.4	119.0	91.8	93.9	93.4	96.6	80.4	88.4	82.6	74.8	62.1
Rural.....			54.6	74.3	59.0	59.4	57.5	54.3	55.5	56.5	54.5	54.6	46.5
Louisiana.....													90.9
Urban.....													123.2
Rural.....													77.1
Maine.....	67.9	78.0	67.3	85.7	85.8	84.8	74.0	75.8	87.0	82.3	72.2	66.9	79.5
Urban.....	82.4	81.1	94.0	97.4	91.7	103.6	100.9	102.4	97.8	125.6	102.5	106.6	123.5
Rural.....	63.2	76.9	58.7	81.8	83.8	77.2	62.9	64.4	82.1	63.2	58.8	49.7	60.0

Source: United States Bureau of the Census.

TABLE I.—*Maternal mortality rates, by States, in urban and rural districts of the United States birth-registration area; 1915-1927—Continued*

State	Deaths of mothers from puerperal causes per 10,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Maryland.....		63.9	68.0	95.3	83.6	75.7	66.5	59.4	60.0	65.5	58.2	57.8	57.5
Urban.....		75.7	72.4	94.1	89.7	77.5	69.7	60.0	63.0	71.5	74.2	69.4	73.5
Rural.....		52.9	63.7	96.4	75.7	73.2	62.5	58.6	56.0	57.8	37.0	42.4	36.5
Massachusetts.....	57.2	59.8	65.0	92.2	70.6	74.6	65.2	67.8	62.9	64.7	63.3	64.2	63.0
Urban.....	59.6	63.7	70.4	96.0	74.8	78.1	68.2	73.0	67.6	69.1	66.3	66.8	67.2
Rural.....	46.8	41.8	40.2	74.5	50.5	54.4	47.6	37.3	33.7	38.1	44.9	47.4	35.2
Michigan.....	66.8	68.2	74.2	85.9	77.2	93.2	68.5	68.5	70.3	65.3	63.7	67.2	68.0
Urban.....	72.9	72.8	76.3	96.6	83.2	97.7	71.1	73.0	82.2	72.8	71.7	77.4	77.6
Rural.....	61.8	64.0	72.3	75.5	71.0	87.5	65.5	63.2	54.5	55.2	52.6	51.6	53.5
Minnesota.....	51.9	54.6	55.7	78.3	67.4	78.5	57.2	49.5	60.2	49.7	52.8	57.4	44.4
Urban.....	54.3	62.2	59.7	87.6	64.4	90.2	80.8	54.1	77.2	57.7	59.7	75.9	43.1
Rural.....	50.8	51.0	53.7	73.9	68.8	72.2	44.2	46.8	49.8	44.6	48.4	45.5	45.2
Mississippi.....							95.3	83.2		95.1	98.3	78.7	86.7
Urban.....							179.8	202.1	161.9	149.4	163.1	129.7	158.1
Rural.....							88.3	72.7	81.6	89.6	92.1	73.6	78.8
Missouri.....													67.4
Urban.....													80.8
Rural.....													57.9
Montana.....								79.1	75.5	65.6	81.1	80.2	66.3
Urban.....								85.9	85.2	94.5	79.6	113.9	102.6
Rural.....								76.9	71.9	55.5	81.6	68.5	53.7
Nebraska.....						71.5	65.8	58.0	57.9	63.2	57.1	66.5	59.2
Urban.....						101.4	105.4	89.9	101.1	89.5	89.2	104.8	91.5
Rural.....						63.1	54.6	49.1	44.4	51.6	46.7	54.2	48.8
New Hampshire.....	61.0	72.4	70.0	77.8	79.7	71.4	62.2	64.5	74.1	61.3	71.2	75.7	64.8
Urban.....	69.3	75.9	67.5	74.5	87.2	76.4	62.8	70.3	63.5	51.9	82.9	80.1	58.8
Rural.....	53.0	69.1	72.7	81.5	71.6	66.1	61.6	58.5	85.9	71.4	58.9	70.9	71.3
New Jersey.....							58.5	64.1	57.0	62.3	64.3	57.6	62.6
Urban.....							68.3	70.9	64.5	73.1	74.9	64.9	70.7
Rural.....							34.7	48.3	39.5	37.3	39.8	41.1	44.3
New York.....	58.6	54.3	57.4	79.7	62.4	68.7	62.7	60.2	57.3	58.6	59.6	56.5	60.6
Urban.....	58.8	54.1	56.0	79.1	63.9	68.2	65.1	62.2	59.0	62.0	62.9	59.1	63.1
Rural.....	57.9	54.8	63.9	82.6	55.9	71.0	52.7	51.7	50.2	43.5	45.1	44.9	49.6
North Carolina.....			82.4	107.9	92.6	100.0	73.5	79.5	79.6	77.5	86.6	88.3	65.6
Urban.....			117.6	186.7	167.6	168.0	119.8	128.5	114.1	124.2	131.5	153.8	112.3
Rural.....			80.2	103.0	87.5	91.7	67.8	73.1	74.6	70.0	78.9	76.8	57.2
North Dakota.....										56.9	61.5	42.9	51.0
Urban.....										99.9	62.0	69.8	105.0
Rural.....										51.5	61.4	39.4	43.0
Ohio.....			71.3	96.8	73.8	79.5	72.2	66.2	71.5	64.1	67.6	67.1	61.9
Urban.....			80.9	104.5	83.3	91.3	84.9	78.0	83.7	76.2	81.6	80.7	75.9
Rural.....			59.4	87.3	62.0	63.0	55.3	50.7	54.1	46.7	47.1	46.6	40.6
Oregon.....						101.2	94.4	74.3	82.8	68.7	64.9	72.3	59.0
Urban.....						123.9	82.4	73.1	91.6	79.2	72.8	71.7	66.2
Rural.....						87.2	102.8	75.2	76.8	61.9	59.6	72.7	55.7
Pennsylvania.....	64.3	70.1	64.9	104.6	68.2	77.6	68.3	62.2	65.9	63.3	64.2	63.7	64.0
Urban.....	74.1	82.4	75.4	111.1	81.9	88.9	84.4	75.8	82.0	82.1	81.8	80.4	83.3
Rural.....	55.2	58.6	54.6	98.3	54.6	65.5	52.2	48.7	49.6	44.2	46.5	46.7	44.4
Rhode Island.....	66.2	58.1	63.5	98.1	(?)	(?)	71.0	55.2	63.0	63.4	52.1	59.6	64.1
Urban.....	72.8	63.2	69.7	104.1			76.3	57.8	70.4	66.9	58.3	62.0	71.1
Rural.....	36.0	36.1	35.7	69.8			39.0	41.2	19.1	42.3	14.6	43.9	21.0
South Carolina.....					111.6	122.0	98.1	106.8	97.1	107.8	(?)	(?)	(?)
Urban.....					170.3	163.0	177.7	141.4	140.3	177.9			
Rural.....					106.4	117.3	88.4	102.4	91.8	99.5			
Tennessee.....													71.0
Urban.....													120.3
Rural.....													56.2

<sup>1</sup> Dropped from the United States birth-registration area.

TABLE I.—*Maternal mortality rates, by States, in urban and rural districts of the United States birth-registration area; 1915-1927—Continued*

State	Deaths of mothers from puerperal causes per 10,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Utah.....			59.4	86.3	83.6	79.1	72.6	55.5	49.8	45.1	51.7	48.6	75.4
Urban.....			67.8	106.4	114.2	112.7	92.7	65.6	71.5	59.4	76.9	69.8	100.0
Rural.....			56.1	78.0	69.9	62.4	62.7	50.3	38.2	37.0	37.5	36.8	61.2
Vermont.....	61.2	78.5	63.6	79.9	79.6	70.2	73.1	74.5	69.6	81.0	67.9	67.2	72.6
Urban.....	51.9	72.2	51.3	50.7	83.2	82.7	97.6	84.5	133.9	90.4	137.9	65.1	133.0
Rural.....	62.8	79.7	65.8	85.4	79.0	67.7	68.7	72.6	57.0	78.9	53.2	67.6	59.2
Virginia.....			81.8	107.0	82.6	86.5	70.0	71.8	74.4	65.2	70.1	79.8	61.5
Urban.....			130.3	161.1	92.1	133.0	113.3	111.9	99.5	100.4	95.2	122.8	104.2
Rural.....			70.9	94.5	80.0	73.8	58.7	61.2	67.4	55.5	63.2	67.3	49.5
Washington.....			73.7	98.5	86.0	92.0	77.7	78.8	66.5	70.9	60.2	75.0	66.5
Urban.....			86.2	103.6	100.6	99.0	86.7	84.4	70.2	85.9	69.3	89.2	68.1
Rural.....			63.4	93.8	71.7	84.6	69.0	73.3	62.7	55.1	50.1	59.7	64.7
West Virginia.....											63.3	70.6	61.5
Urban.....											117.7	129.5	130.3
Rural.....											50.8	57.4	46.8
Wisconsin.....			57.3	59.6	48.0	67.3	58.1	55.8	58.1	60.5	52.3	59.6	52.8
Urban.....			58.1	68.8	62.1	82.3	73.9	66.8	69.5	66.9	63.0	71.1	56.2
Rural.....			56.9	54.4	39.8	57.8	48.2	48.9	50.3	55.8	44.1	50.3	50.0
Wyoming.....								71.3	72.7	97.6	95.2	93.4	87.2
Urban.....								110.6	113.5	126.2	139.3	58.5	125.0
Rural.....								62.0	61.6	89.9	83.6	101.9	79.0
District of Columbia.....	69.7	101.4	85.5	90.7	85.6	88.4	101.3	70.5	101.0	121.8	86.7	77.4	86.3

TABLE II.—*Maternal mortality rates, by color, in the United States birth-registration area and in States having 2,000 or more colored births annually; 1915-1927<sup>1</sup>*

State	Deaths of mothers from puerperal causes per 10,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Area.....	60.8	62.2	66.2	91.6	73.7	79.9	68.2	66.4	66.5	65.6	64.7	65.6	64.7
White.....	60.1	60.8	63.2	88.9	69.6	78.0	64.4	62.8	62.6	60.7	60.3	61.9	59.4
Colored.....	105.6	117.9	117.7	139.3	124.4	128.1	107.7	106.8	109.5	117.9	116.2	107.1	113.3
Alabama.....													79.6
White.....													62.5
Colored.....													111.6
Arkansas.....													89.7
White.....													72.5
Colored.....													151.0
California.....					79.8	76.9	68.3	71.9	67.5	59.2	60.1	56.4	57.6
White.....					82.4	78.2	70.7	72.8	68.8	56.7	59.6	56.4	56.3
Colored.....					56.7	65.0	45.1	63.1	53.6	88.5	65.8	56.1	76.7
Florida.....										121.4	121.4	106.9	109.9
White.....										90.0	102.2	90.4	89.8
Colored.....										186.9	163.4	148.5	156.7
Illinois.....								63.2	64.1	61.6	58.3	65.0	55.6
White.....								61.8	61.6	59.5	56.4	63.2	53.0
Colored.....								111.6	137.5	108.8	100.3	104.9	110.2
Indiana.....			(2)	(2)	(2)	(2)	(2)	(2)	(2)	58.1	60.5	64.8	65.7
White.....										56.8	58.4	62.4	64.0
Colored.....										96.2	121.2	134.5	111.0

<sup>1</sup> Source: United States Bureau of the Census.<sup>2</sup> Not shown for years in which the number of colored births was less than 2,000.

TABLE II.—*Maternal mortality rates, by color, in the United States birth-registration area and in States having 2,000 or more colored births annually; 1915-1927—Continued*

State	Deaths of mothers from puerperal causes per 10,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Kentucky			60.1	80.0	63.2	64.4	62.7	60.7	59.6	61.8	59.5	58.4	49.4
White			56.4	75.0	58.5	59.7	56.7	53.9	54.2	57.0	53.6	54.9	45.3
Colored			108.2	153.8	125.0	130.4	147.7	185.0	153.5	130.7	138.0	106.2	108.6
Louisiana													90.9
White													69.8
Colored													125.8
Maryland		63.9	68.0	95.3	83.6	75.7	66.5	59.4	60.0	65.5	58.2	57.8	57.5
White		56.0	61.0	85.8	76.1	65.9	59.5	53.5	54.3	56.6	50.5	47.4	53.9
Colored		98.0	97.8	138.1	115.0	118.3	96.1	84.3	83.0	101.5	89.0	98.3	71.9
Michigan	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	70.3	65.3	63.7	67.2	68.0
White									69.1	63.8	61.9	65.9	66.1
Colored									122.3	116.2	126.9	110.4	123.4
Mississippi							95.3	83.2	88.1	95.1	98.3	78.7	86.7
White							71.4	64.8	65.5	65.1	66.6	65.2	61.1
Colored							120.3	100.5	109.5	125.5	128.7	91.6	111.4
Missouri													67.4
White													65.6
Colored													130.7
New Jersey							58.5	64.1	57.0	62.3	64.3	57.6	62.6
White							55.6	61.6	55.0	59.2	62.7	55.8	59.3
Colored							124.8	119.3	96.6	117.1	90.9	84.0	109.6
New York	58.6	54.3	57.4	79.7	62.4	68.7	62.7	60.2	57.3	58.6	59.6	56.5	60.6
White	58.1	53.6	56.5	79.1	60.9	67.1	60.9	59.3	56.5	57.5	58.1	54.3	58.0
Colored	97.2	96.3	118.3	114.0	140.7	142.1	139.4	97.2	85.2	93.1	101.6	116.9	125.5
North Carolina			82.4	107.9	92.6	100.0	73.5	79.5	79.6	77.5	86.6	88.3	65.6
White			68.1	94.0	82.0	86.2	61.0	70.5	67.3	65.5	68.0	71.4	50.8
Colored			114.8	139.0	117.6	132.2	101.8	99.4	107.0	103.8	127.9	125.7	98.9
Ohio			71.3	96.8	73.8	79.5	72.2	66.2	71.5	64.1	67.6	67.1	61.9
White			69.8	95.7	72.1	78.2	70.6	63.8	68.0	62.2	64.5	64.4	59.6
Colored			136.0	138.2	126.4	120.3	116.0	132.9	158.2	101.8	129.6	115.8	104.0
Pennsylvania	64.3	70.1	64.9	104.6	68.2	77.6	68.3	62.2	65.9	63.3	64.2	63.7	64.0
White	63.3	69.1	63.6	102.9	65.5	76.0	67.4	61.2	64.6	61.0	62.7	61.5	61.6
Colored	112.2	118.7	118.6	174.7	157.9	130.6	97.7	94.0	100.9	114.7	97.9	109.2	111.6
South Carolina					111.6	122.0	98.1	106.8	97.1	107.8	(3)	(3)	(3)
White					78.1	89.9	77.9	85.5	74.1	75.9			
Colored					144.2	154.0	118.1	128.0	121.8	140.8			
Tennessee													71.0
White													58.7
Colored													134.8
Virginia			81.8	107.0	82.6	86.5	70.0	71.8	74.4	65.2	70.1	79.8	61.5
White			64.4	96.0	66.0	75.4	56.9	58.3	59.7	50.1	52.6	71.2	47.9
Colored			120.6	131.8	118.7	110.9	99.4	101.7	107.8	99.6	109.7	99.6	93.6
West Virginia											63.3	70.6	61.5
White											59.6	66.1	58.9
Colored											125.3	139.9	103.8
District of Columbia	69.7	101.4	85.5	90.7	85.6	88.4	101.3	70.5	101.0	121.8	86.7	77.4	86.3
White	56.1	76.3	59.0	78.1	67.8	66.5	98.6	56.1	89.3	91.7	60.8	64.4	66.0
Colored	99.4	157.5	147.7	126.1	131.6	143.8	107.7	105.7	129.5	189.6	143.3	104.9	130.6

<sup>1</sup> Not shown for years in which the number of colored births was less than 2,000.

<sup>2</sup> Dropped from the birth-registration area.

TABLE III.—*Infant mortality rates, by States, in urban and rural districts of the United States birth-registration area; 1915-1927*<sup>1</sup>

State	Deaths of infants under 1 year of age per 1,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Area.....	100	101	94	101	87	86	76	76	77	71	72	73	65
Urban.....	103	104	100	108	89	91	78	80	78	72	73	74	65
Rural.....	94	97	88	94	84	81	74	72	76	69	70	72	64
Alabama.....													64
Urban.....													77
Rural.....													62
Arizona.....												121	130
Urban.....												111	115
Rural.....												125	136
Arkansas.....													61
Urban.....													82
Rural.....													59
California.....					70	74	66	71	73	67	69	63	62
Urban.....					64	68	60	64	66	62	62	56	57
Rural.....					79	83	75	81	83	74	79	72	70
Connecticut.....	107	101	94	107	86	92	73	77	77	69	73	72	59
Urban.....	103	101	93	106	86	93	72	77	77	67	70	70	57
Rural.....	119	101	96	112	87	88	79	77	75	77	88	82	66
Delaware.....							98	100	104	95	91	93	71
Urban.....							93	100	99	91	87	87	71
Rural.....							103	101	110	100	94	100	71
Florida.....										82	74	75	67
Urban.....										88	87	85	69
Rural.....										80	68	70	67
Idaho.....												63	50
Urban.....												59	53
Rural.....												63	50
Illinois.....								76	82	71	73	69	64
Urban.....								81	85	75	74	68	64
Rural.....								68	77	65	70	72	66
Indiana.....			86	87	79	82	71	67	71	65	68	72	59
Urban.....			100	104	88	96	79	76	78	73	75	78	63
Rural.....			78	77	71	72	66	61	65	59	62	68	55
Iowa.....										55	56	59	55
Urban.....										66	70	72	67
Rural.....										50	50	53	50
Kansas.....			77	80	70	73	63	65	63	59	62	65	55
Urban.....			98	106	88	92	73	79	78	70	72	76	62
Rural.....			73	73	65	67	59	60	57	54	58	61	53
Kentucky.....			87	93	82	73	62	69	72	65	71	75	61
Urban.....			103	119	105	90	72	83	89	79	85	92	71
Rural.....			85	90	78	70	60	67	68	62	67	72	59
Louisiana.....													77
Urban.....													89
Rural.....													73
Maine.....	105	108	93	101	91	102	88	86	89	81	76	80	80
Urban.....	109	128	107	109	89	110	79	97	89	88	79	86	86
Rural.....	104	102	89	98	91	98	92	82	88	78	75	77	77
Maryland.....		121	120	140	105	104	94	94	95	86	90	87	81
Urban.....		120	116	146	98	105	87	93	87	84	82	83	81
Rural.....		122	123	135	115	103	102	96	104	88	101	92	81
Massachusetts.....	101	100	98	113	88	91	76	81	78	68	73	73	65
Urban.....	103	103	99	115	90	92	76	82	78	68	73	73	65
Rural.....	92	87	91	104	82	83	77	76	75	66	74	72	64
Michigan.....	86	96	88	89	90	92	79	75	80	72	75	77	68
Urban.....	96	106	97	97	97	100	81	81	85	75	79	82	70
Rural.....	78	87	80	81	82	82	75	67	74	68	71	70	64

<sup>1</sup> Source: United States Bureau of the Census.

TABLE III.—*Infant mortality rates, by States, in urban and rural districts of the United States birth-registration area; 1915-1927—Continued*

State	Deaths of infants under 1 year of age per 1,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Minnesota.....	70	70	67	71	67	66	59	58	62	57	60	58	52
Urban.....	77	78	75	79	68	71	59	60	62	56	61	57	48
Rural.....	67	66	64	67	66	64	59	56	62	57	60	58	54
Mississippi.....							68	68	68	71	68	70	67
Urban.....							95	87	86	94	87	77	88
Rural.....							66	66	67	69	67	69	64
Missouri.....													60
Urban.....													63
Rural.....													57
Montana.....								70	71	67	71	77	66
Urban.....								78	72	72	73	77	58
Rural.....								68	71	65	70	77	70
Nebraska.....						64	59	57	57	55	58	59	51
Urban.....						86	74	71	71	68	69	68	60
Rural.....						58	54	53	53	51	54	56	48
New Hampshire.....	110	115	110	113	93	88	87	80	93	80	76	79	69
Urban.....	131	133	132	124	101	97	95	90	102	81	87	82	72
Rural.....	89	97	86	102	85	78	78	69	84	78	65	75	66
New Jersey.....							74	79	72	70	69	70	61
Urban.....							74	79	71	70	68	69	61
Rural.....							74	77	74	69	70	72	62
New York.....	99	94	91	97	84	86	75	77	72	69	68	71	59
Urban.....	102	97	93	98	85	88	76	78	71	70	68	70	59
Rural.....	89	83	85	93	77	78	74	72	76	67	66	71	62
North Carolina.....			100	102	84	85	75	80	81	82	79	82	79
Urban.....			159	168	124	113	97	96	109	100	104	106	106
Rural.....			96	98	82	81	72	77	77	79	74	78	74
North Dakota.....										67	72	69	63
Urban.....										68	49	72	47
Rural.....										67	74	69	66
Ohio.....			92	94	90	83	75	72	75	67	70	76	62
Urban.....			103	100	94	89	76	76	75	70	71	78	64
Rural.....			79	87	85	74	73	65	75	62	67	72	59
Oregon.....					63	62	51	58	57	54	51	52	48
Urban.....					69	60	50	59	53	51	48	39	47
Rural.....					59	63	52	58	60	55	53	62	48
Pennsylvania.....	110	114	111	129	100	97	88	88	90	79	82	82	69
Urban.....	110	114	113	130	99	99	86	89	87	80	81	81	68
Rural.....	110	114	109	128	101	95	89	87	94	77	83	83	70
Rhode Island.....	120	111	108	126	(?)	(?)	93	85	94	80	73	82	67
Urban.....	118	116	109	127			94	86	94	81	74	82	65
Rural.....	129	93	101	118			86	79	94	73	69	82	78
South Carolina.....					113	116	96	93	96	102	(?)	(?)	(?)
Urban.....					139	150	127	105	117	121			
Rural.....					111	112	92	91	94	99			
Tennessee.....													71
Urban.....													86
Rural.....													67
Utah.....			69	64	71	71	73	69	59	64	56	75	54
Urban.....			66	66	74	69	69	70	61	59	49	70	54
Rural.....			71	63	69	72	75	68	58	67	60	78	54
Vermont.....	85	93	85	93	85	96	78	73	76	70	72	72	70
Urban.....	116	128	108	119	121	117	102	98	92	78	66	72	65
Rural.....	80	86	81	88	79	92	73	68	73	68	74	72	71
Virginia.....			98	103	91	84	79	77	84	78	81	84	75
Urban.....			129	145	106	107	95	94	98	93	97	103	89
Rural.....			91	93	87	77	74	72	80	73	76	78	72

<sup>2</sup> Dropped from the United States birth-registration area.

TABLE III.—*Infant mortality rates, by States, in urban and rural districts of the United States birth-registration area; 1915-1927—Continued*

State	Deaths of infants under 1 year of age per 1,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Washington.....			69	69	63	66	55	62	57	56	56	56	50
Urban.....			62	67	59	64	55	58	51	52	50	54	47
Rural.....			75	71	67	69	56	65	62	61	64	59	53
West Virginia.....											80	82	72
Urban.....											93	93	84
Rural.....											77	79	69
Wisconsin.....			78	79	80	77	72	71	70	65	67	69	59
Urban.....			92	99	94	90	79	78	77	67	71	74	61
Rural.....			69	67	71	68	68	67	65	63	64	65	58
Wyoming.....								79	80	64	64	76	69
Urban.....								104	102	73	51	78	64
Rural.....								73	73	62	67	75	70
District of Columbia.....	111	106	97	112	85	91	83	85	92	76	87	85	68

TABLE IV.—*Infant mortality rates, by color, in the United States birth-registration area and in States having 2,000 or more colored births annually; 1915-1927<sup>1</sup>*

State	Deaths of infants under 1 year of age per 1,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Area.....	100	101	94	101	87	86	76	76	77	71	72	73	65
White.....	99	99	91	97	83	82	72	73	73	67	68	70	61
Colored.....	181	185	151	161	131	132	108	110	117	113	111	112	100
Alabama.....													64
White.....													55
Colored.....													82
Arkansas.....													61
White.....													56
Colored.....													77
California.....					70	74	66	71	73	67	69	63	62
White.....					70	74	66	71	73	67	69	63	62
Colored.....					73	77	69	77	72	70	65	65	69
Florida.....										82	74	75	67
White.....										70	60	62	56
Colored.....										107	105	107	93
Illinois.....								76	82	71	73	69	64
White.....								75	79	68	70	68	62
Colored.....								125	157	141	122	109	105
Indiana.....			(?)	(?)	(?)	(?)	(?)	(?)	(?)	65	68	72	59
White.....										63	66	70	57
Colored.....										140	119	145	96
Kentucky.....			87	93	82	73	62	69	72	65	71	75	61
White.....			82	87	77	69	58	64	67	61	67	71	58
Colored.....			152	191	147	138	110	157	157	119	119	134	109
Louisiana.....													77
White.....													58
Colored.....													109
Maryland.....		121	120	140	105	104	94	94	95	86	90	87	81
White.....		101	101	124	92	90	81	81	80	76	76	74	68
Colored.....		209	201	215	160	164	147	147	155	128	146	137	134
Michigan.....	(?)	(?)	(?)	(?)	(?)	(?)	(?)	(?)	80	72	75	77	68
White.....									79	71	73	76	66
Colored.....									147	126	149	124	102

<sup>1</sup> Source: United States Bureau of the Census.<sup>2</sup> Not shown for years in which the number of colored births was less than 2,000.



TABLE IV.—*Infant mortality rates, by color, in the United States birth-registration area and in States having 2,000 or more colored births annually; 1915–1927—Continued*

State	Deaths of infants under 1 year of age per 1,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Mississippi.....							68	68	68	71	68	70	67
White.....							53	56	53	55	53	59	55
Colored.....							85	79	82	88	83	81	78
Missouri.....													60
White.....													57
Colored.....													112
New Jersey.....							74	79	72	70	69	70	61
White.....							71	76	69	67	65	67	58
Colored.....							139	129	124	125	125	122	113
New York.....	99	94	91	97	84	86	75	77	72	69	68	71	59
White.....	98	93	90	95	82	85	74	76	71	68	66	68	57
Colored.....	191	169	176	175	151	159	138	124	121	114	119	132	109
North Carolina.....			100	102	84	85	75	80	81	82	79	82	79
White.....			85	85	74	73	66	70	70	70	67	71	66
Colored.....			133	140	109	113	95	101	106	110	105	107	109
Ohio.....			92	94	90	83	75	72	75	67	70	76	62
White.....			91	92	88	81	73	70	72	64	67	73	60
Colored.....			158	178	157	153	122	111	139	113	127	128	103
Pennsylvania.....	110	114	111	129	100	97	88	88	90	79	82	82	69
White.....	108	113	109	126	98	95	86	86	88	76	80	80	67
Colored.....	184	180	194	226	151	167	134	142	151	138	131	139	112
South Carolina.....					113	116	96	93	96	102	(3)	(3)	(3)
White.....					76	83	69	67	70	77			
Colored.....					149	148	123	119	125	127			
Tennessee.....													71
White.....													64
Colored.....													107
Virginia.....			98	103	91	84	79	77	84	78	81	84	75
White.....			80	86	78	72	68	65	71	66	67	72	62
Colored.....			137	141	120	110	103	102	115	104	111	111	106
West Virginia.....											80	82	72
White.....											78	79	70
Colored.....											110	124	101
District of Columbia.....	111	106	97	112	85	91	83	85	92	76	87	85	68
White.....	83	83	71	85	67	72	68	64	71	62	67	67	49
Colored.....	173	158	160	188	132	139	122	134	143	108	132	123	109

<sup>3</sup> Dropped from the United States birth-registration area.

TABLE V.—*Infant mortality rates (deaths of infants under 1 year of age per 1,000 live births) from specified causes in the expanding birth-registration area; 1915–1927*

Cause of death	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Syphilis.....	1.2	1.4	1.2	1.0	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.7
Convulsions.....	1.6	1.3	1.1	1.2	1.0	1.0	0.9	0.8	0.7	0.7	0.7	0.6	0.5
Bronchitis <sup>1</sup> .....	2.6	2.5	2.2	2.1	1.8	1.7	1.0	1.2	1.1	0.9	0.8	0.8	0.6
Bronchopneumonia.....	9.9	9.5	8.3	9.0	7.8	7.9	6.2	7.8	7.8	7.0	6.9	8.0	5.8
Pneumonia.....	4.2	3.9	4.2	4.9	3.2	3.2	2.4	3.0	2.9	2.8	2.6	2.9	2.3
Diseases of the stomach.....	1.5	1.4	1.2	1.4	1.4	1.2	1.0	0.8	0.8	0.7	0.6	0.5	0.5
Diarrhea and enteritis.....	23.2	24.0	20.0	19.0	15.7	14.9	13.5	11.7	11.5	9.2	11.2	9.7	7.8
Congenital malformations.....	6.4	6.8	6.3	6.5	6.3	6.2	6.1	6.3	6.3	6.1	6.2	6.2	5.6
Congenital debility.....	11.8	10.2	8.8	9.3	8.2	7.7	4.4	3.9	4.0	3.5	3.5	3.3	2.8
Premature birth.....	18.5	19.3	19.1	20.2	19.2	19.4	17.9	18.1	17.8	17.7	17.2	17.7	16.8
Injury at birth.....	4.2	4.2	3.8	3.3	3.4	3.7	4.2	4.5	4.6	4.8	4.9	4.9	4.8
Other diseases of early infancy.....	(1)	(1)	(1)	(1)	(1)	(1)	2.7	2.5	2.6	2.5	2.4	2.2	2.0

Source: U. S. Bureau of the Census.

<sup>1</sup> Included with congenital debility.

TABLE VI.—*Maternal mortality rates for the United States and certain foreign countries*<sup>1</sup>

Country	Deaths of mothers from puerperal causes per 10,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Australia.....	43	53	56	47	47	50	47	45	51	55	56	53	-----
Belgium.....	-----	-----	-----	-----	72	60	57	53	56	58	50	-----	-----
Canada <sup>2</sup> .....	-----	-----	-----	-----	-----	-----	51	55	54	60	56	57	-----
Chile.....	66	73	72	82	88	75	79	80	74	61	61	58	-----
Czechoslovakia.....	-----	-----	-----	-----	-----	-----	-----	-----	33	31	33	34	-----
Denmark.....	-----	-----	-----	-----	-----	24	20	20	26	23	24	26	-----
England and Wales.....	42	41	39	38	44	43	39	38	38	37	41	41	41
Finland.....	34	36	38	44	40	36	33	30	31	35	29	-----	-----
Germany.....	40	45	45	49	51	49	49	50	52	53	50	49	-----
Hungary.....	-----	-----	-----	-----	-----	32	29	30	28	31	29	32	-----
Irish Free State.....	-----	-----	-----	-----	-----	-----	-----	57	48	48	47	49	-----
Italy.....	22	27	30	37	29	28	26	25	27	32	28	-----	-----
Japan.....	36	35	35	38	33	35	36	33	34	31	30	27	-----
The Netherlands <sup>3</sup> .....	25	26	25	30	34	24	23	25	23	24	26	29	-----
New Zealand.....	47	59	60	52	51	65	51	51	51	50	47	42	-----
Northern Ireland.....	-----	-----	-----	-----	-----	-----	-----	47	49	45	44	56	48
Norway.....	27	28	30	30	35	26	22	25	28	29	27	-----	-----
Salvador.....	-----	-----	-----	-----	-----	-----	57	46	50	57	50	55	62
Scotland.....	61	57	59	70	62	62	64	66	64	58	62	64	64
Spain.....	52	52	51	64	53	50	51	49	46	44	-----	-----	-----
Sweden.....	29	27	25	26	32	27	27	25	23	-----	-----	-----	-----
Switzerland.....	-----	-----	-----	-----	-----	-----	55	51	46	48	43	44	-----
U. S. birth-registration area <sup>4</sup> .....	61	62	66	92	74	80	68	66	67	66	65	66	65
Uruguay.....	22	29	32	30	23	34	33	27	27	25	25	30	-----

<sup>1</sup> Figures from official sources.<sup>2</sup> Exclusive of Quebec from 1921 to 1925.<sup>3</sup> Omitting from calculation of rates prior to 1924 the live-born infants who died before registration of birth (within 3 days of birth).<sup>4</sup> The United States birth-registration area has expanded during this period from 10 States in 1915 to 41 States in 1927.TABLE VII.—*Infant mortality rates for the United States and certain foreign countries*<sup>1</sup>

Country	Deaths of infants under 1 year of age per 1,000 live births												
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Australia.....	68	70	56	59	69	69	66	53	61	57	53	54	-----
Austria.....	218	192	186	193	156	157	154	156	141	127	119	-----	-----
Belgium.....	-----	-----	-----	-----	109	110	122	114	100	95	100	104	-----
Bulgaria.....	-----	-----	-----	-----	110	146	158	155	165	150	-----	-----	-----
Canada <sup>2</sup> .....	-----	-----	-----	-----	-----	-----	88	87	88	79	79	102	-----
Chile.....	254	241	269	255	306	263	278	240	283	266	258	251	-----
Czechoslovakia.....	-----	-----	-----	-----	-----	-----	-----	148	148	143	146	154	-----
Denmark.....	95	100	100	74	92	91	77	85	83	84	80	84	-----
Egypt.....	-----	-----	-----	-----	-----	-----	133	140	143	150	155	146	-----
England and Wales.....	110	91	96	97	89	80	83	77	69	75	75	70	70
Finland.....	110	110	118	115	135	97	95	99	92	107	85	-----	-----
France <sup>3</sup> .....	142	122	123	138	119	99	115	85	96	85	89	-----	-----
Germany.....	168	149	155	154	121	131	134	130	132	109	105	102	-----
Guatemala.....	-----	-----	-----	-----	-----	76	92	79	81	99	102	87	-----
Hungary.....	264	219	215	217	158	193	193	198	184	193	168	167	-----
Irish Free State.....	-----	-----	-----	-----	-----	-----	69	66	72	68	74	-----	-----
Italy.....	147	147	139	192	129	127	129	126	128	126	119	-----	-----
Japan.....	160	170	173	189	170	166	168	166	163	156	142	137	-----
Lithuania.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	170	179	146	-----
Latvia.....	-----	-----	-----	-----	-----	-----	91	88	101	107	88	96	-----
The Netherlands.....	-----	-----	-----	-----	-----	-----	-----	-----	61	58	61	-----	-----
New Zealand.....	50	51	48	48	45	51	48	42	44	40	40	40	-----
Northern Ireland.....	-----	-----	-----	-----	-----	-----	77	76	85	86	85	78	-----
Norway.....	68	64	64	63	62	58	54	55	50	50	46	-----	-----
Salvador.....	-----	-----	-----	-----	-----	-----	141	124	118	150	139	164	127
Scotland.....	126	97	107	100	102	92	90	101	79	98	91	83	89
Spain.....	152	147	155	183	156	165	147	145	148	140	-----	-----	-----
Sweden.....	76	70	65	65	70	63	64	62	56	60	55	-----	-----
Switzerland.....	90	78	79	88	82	84	74	70	61	62	58	57	57
U. S. birth-registration area.....	100	101	94	101	87	86	76	76	77	71	72	73	65
Uruguay.....	111	124	107	110	101	117	107	94	104	108	115	93	-----

<sup>1</sup> Figures from official sources.<sup>2</sup> Exclusive of Quebec from 1921 to 1925.<sup>3</sup> Omitting from calculation the deaths of infants occurring before registration (within 3 days of birth).

## APPENDIX D.—PUBLICATIONS AND EXHIBITS OF THE CHILDREN'S BUREAU BEARING UPON MATERNAL, INFANT, AND CHILD WELFARE AND HYGIENE

### BULLETINS

- The Promotion of the Welfare and Hygiene of Maternity and Infancy—Report of the administration of the act of Congress of November 23, 1921, for the period March 20, 1922, to June 30, 1923. No. 137. 42 pp.
- The Promotion of the Welfare and Hygiene of Maternity and Infancy—Report of the administration of the act of Congress of November 23, 1921, for fiscal year ended June 30, 1924. No. 146. 56 pp.
- The Promotion of the Welfare and Hygiene of Maternity and Infancy—Report of the administration of the act of Congress of November 23, 1921, for fiscal year ended June 30, 1925. No. 156. 81 pp.
- The Promotion of the Welfare and Hygiene of Maternity and Infancy—Report of the administration of the act of Congress of November 23, 1921, for fiscal year ended June 30, 1926. No. 178. 95 pp.
- The Promotion of the Welfare and Hygiene of Maternity and Infancy—Report of the administration of the act of Congress of November 23, 1921, for fiscal year ended June 30, 1927. No. 186. 150 pp.
- Proceedings of the Third Annual Conference of State Directors in Charge of the Local Administration of the Maternity and Infancy Act (act of Congress of November 23, 1921), Held in Washington, D. C., January 11-13, 1926. No. 157. 209 pp.
- The Physician's Part in a Practical State Program of Prenatal Care, by Fred L. Adair, M. D. Standards of Prenatal Care, by Robert L. De Normandie, M. D. Separate No. 1. 20 pp.
- The Nurse's Part in a State Program of Prenatal Care, by Carolyn Conant Van Blarcom, R. N. Separate No. 2. 8 pp.
- How to Make a Study of Maternal Mortality, by Robert L. De Normandie, M. D. Separate No. 3. 11 pp.
- A Demonstration of the Community Control of Rickets, by Martha M. Elliot, M. D. Separate No. 4. 5 pp.
- Stimulation of Birth Registration, by William H. Davis, M. D. Separate No. 5. 5 pp.
- The Practical Application of Mental Hygiene to the Welfare of the Child, by D. A. Thom, M. D. Separate No. 6. 9 pp.
- Proceedings of the Fourth Annual Conference of State Directors in Charge of the Local Administration of the Maternity and Infancy Act (act of Congress of November 23, 1921), Held in Washington, D. C., January 11-13, 1927. No. 181. 167 pp.
- The Problem of Compulsory Notification of Puerperal Septicemia, by George Clark Mosher, M. D. Separate No. 1. 13 pp.
- The County Health Organization in Relation to Maternity and Infancy Work and Its Permanency, by John A. Ferrell, M. D. Separate No. 2. 12 pp.
- Evaluation of Maternity and Infancy Work in a Generalized Program, by Jessie L. Marriner. Separate No. 3. 4 pp.
- Breast-Feeding Demonstrations, by Frank Howard Richardson, M. D. Separate No. 4. 8 pp.
- Standards for Training of Public-Health Nurses, by Elizabeth Fox. Separate No. 6. 7 pp.
- Prenatal Care, by Mrs. Max West. No. 4. 41 pp.

- Infant Care (revised). No. 8. 118 pp.
- Child Care—The Preschool Age, by Mrs. Max West. No. 30. 82 pp.
- Child Management (revised September, 1927), by D. A. Thom, M. D. No. 143. 47 pp.
- Standards of Prenatal Care; an outline for the use of physicians. No. 153. 4 pp. (Also sample form for pregnancy record.)
- Standards for Physicians Conducting Conferences at Child-Health Centers. No. 154. 11 pp. (Also sample forms for conference record.)
- How to Conduct a Children's Health Conference. No. 23. 24 pp.
- Children's Health Centers. No. 45. 7 pp.
- The Public-Health Nurse; how she helps to keep the babies well. No. 47. 7 pp.
- Milk, the Indispensable Food for Children, by Dorothy Reed Mendenhall, M. D. No. 163. 43 pp.
- What Is Malnutrition? (revised) by Lydia J. Roberts. No. 59. 19 pp.
- Nutrition Work for Preschool Children, by Agnes K. Hauna. No. 138. 25 pp.
- Maternal Mortality; the risk of death in childbirth and from all diseases caused by pregnancy and confinement, by Robert Morse Woodbury, Ph. D. No. 158. 163 pp.
- References on the Physical Growth and Development of the Normal Child. No. 179. 353 pp.
- The Hygiene of Maternity and Childhood—Outlines for Study. Separate No. 1 from Child Care and Child Welfare, prepared in cooperation with the Federal Board for Vocational Education. No. 90. 327 pp.
- Causal Factors in Infant Mortality; a statistical study based on investigations in eight cities, by Robert Morse Woodbury, Ph. D. A consolidated report of the Children's Bureau studies in this field. No. 142. 245 pp.
- Habit Clinics for the Child of Preschool Age; their organization and practical value, by D. A. Thom, M. D. No. 135. 71 pp.
- Posture Clinics; organization and exercises, by Armin Klein, M. D. No. 164. 32 pp.
- Posture Exercises; a handbook for schools and for teachers of physical education, by Armin Klein, M. D., and Leah C. Thomas. No. 165. 33 pp.
- A Study of Maternity Homes in Minnesota and Pennsylvania. No. 167. 92 pp.
- Recreation for Blind Children, by Martha Travilla Speakman. No. 171. 74 pp.
- A Tabular Summary of State Laws Relating to Public Aid to Children in Their Own Homes in Effect January 1, 1929, and the text of the laws of certain States. Third edition. Chart No. 3. 37 pp.
- Minimum Standards for Child Welfare Adopted by the Washington and Regional Conferences on Child Welfare, 1919. No. 62. 15 pp.
- List of Psychiatric Clinics for Children in the United States. No. 191. 28 pp.

#### LEAFLETS

- Economic Factors in Infant Mortality, by Robert Morse Woodbury, Ph. D. (Reprinted from the Quarterly Publication of the American Statistical Association, June, 1924.) 19 pp.
- Federal Aid for the Protection of Maternity and Infancy, by Grace Abbott. (Revised reprint from the American Journal of Public Health, September, 1924.) 8 pp.
- The Trend of Maternal Mortality Rates in the United States Death-Registration Area, 1900-1921, by Robert Morse Woodbury, Ph. D. (Reprinted from the American Journal of Public Health, September, 1924.) 7 pp.
- Westergaard's Method of Expected Deaths as Applied to the Study of Infant Mortality, by Robert Morse Woodbury, Ph. D. (Reprinted from the Quarterly Publication of the American Statistical Association, September, 1922.) 12 pp.
- What Is the Future of the Day Nursery? By Grace Abbott. (Reprinted from Child Health Bulletin, vol. 3, no. 2, February, 1927.)
- Transverse Lines in X-Ray Plates of the Long Bones of Children, by Martha M. Eliot, M. D., Susan P. Souther, M. D., and E. A. Park, M. D. (Reprinted from Bulletin of the Johns Hopkins Hospital, vol. 41, no. 6 (December, 1927), pp. 364-388.)

**Lesson Material on Care of the Preschool Child:**

- No. 1. Your Child's Health Examination.
- No. 2. Your Child's Physical Defects.
- No. 3. Your Child's Teeth.
- No. 4. Your Child's Nutrition.
- No. 5. Your Child's Food Likes and Dislikes.
- No. 6. Your Child's Posture.
- No. 7. Your Child's Need of Sunshine and Open Air.
- No. 8. Your Child's Behavior.
- No. 9. Protecting Your Child against Communicable Diseases.
- References on Prenatal, Infant, and Child Care, and Child Management.
- The Children's Bureau: what it is, what it has done, and what it is doing for the children of the United States.
- List of Publications, January 2, 1929.
- List of Exhibits.

**FOLDERS**

- Minimum Standards of Prenatal Care. No. 1.
- Backyard Playgrounds. No. 2.
- Why Drink Milk? No. 3.
- What Builds Babies? No. 4.
- Sunlight for Babies. No. 5.
- Breast Feeding. No. 8.
- Keeping the Well Baby Well. No. 9.
- Out of Babyhood into Childhood. No. 10.
- Why Sleep? No. 11.

**DODGERS**

- Books and Pamphlets on Child Care (revised). No. 1.
- Is Your Child's Birth Recorded? (revised). No. 3.

**SMALL CHARTS**

- Baby's Daily Time Cards (a series of six cards, 5 by 8 inches, a different color for each age period up to 2 years). Chart No. 14.

**EXHIBIT MATERIAL<sup>1</sup>**

- Infant Welfare (10 posters in colors, 22 by 28 inches).
- The Health of the Child Is the Power of the Nation (poster in colors, 18 by 24 inches).
- Posture Standards (6 charts, 18 by 38 inches). To be purchased directly from the Government Printing Office at 50 cents for the set of six, or 25 cents for the three girls' charts or for the three boys' charts.
- Well Born. (Two-reel film, showing time 30 minutes. Titles in English or Spanish. Made in 1923.)
- Our Children. (Two-reel film, showing time 35 minutes. Titles in English or Spanish. Made in 1917.)
- Posture. (Two-reel film, showing time 20 minutes. Either reel may be used alone, the first being a general introduction suitable for parents and children.)
- Sun Babies. (One-reel film, showing time 15 minutes. This shows how to give sun baths in order to prevent and cure rickets.)
- The Best-Fed Baby. (One-reel film, showing time 15 minutes. This shows the importance of breast feeding.)
- Trails That Lead to Mothers and Babies. (Film strip illustrating the work done under the maternity and infancy act.)
- The Healthy Baby. (Film strip showing the care of the baby to 2 years of age.)
- Rickets. (Film strip showing the effects of the disease and how it is prevented and cured.)

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<sup>1</sup> A descriptive list of Children's Bureau exhibits containing a statement of the conditions and procedure of loan and purchase can be had on application to the bureau.

- The Preschool Days of Betty Jones. (Film strip showing the care of the pre-school child.)
- Teaching the Old Midwife New Tricks. (Film strip showing the method of instruction used in classes for midwives.)
- The Care of the Baby (50 lantern slides).
- Infant and Child Welfare (54 lantern slides).
- Maternity and Child-Health Center (model; weight, 109 pounds).
- Children's Nursery (model; weight, 245 pounds).
- City Playground for Children (model; weight, 109 pounds).
- Sun Baths for Babies (model; weight, 95 pounds).



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